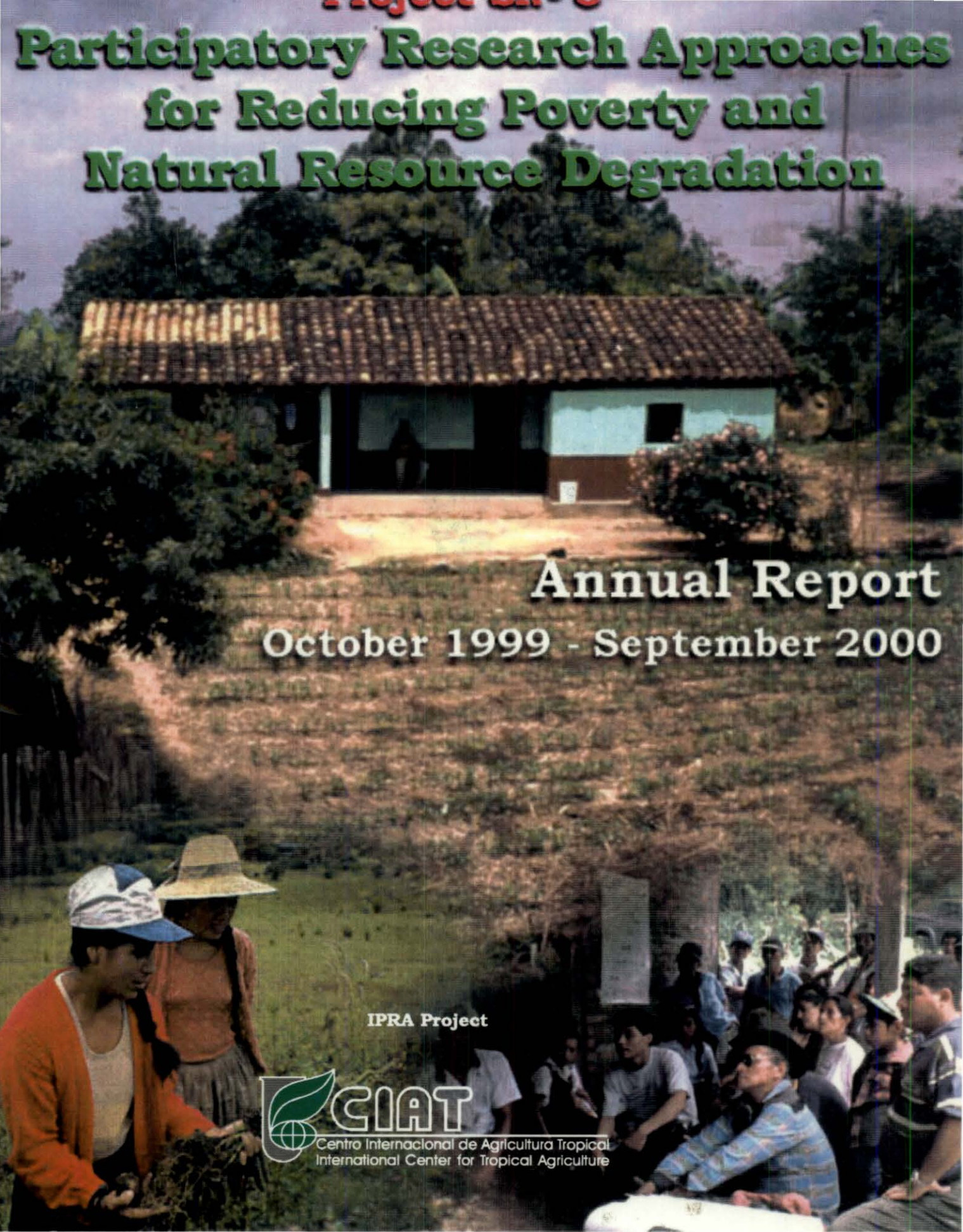
Project IPRA

Participatory Research Approaches for Reducing Poverty and Natural Resource Degradation



Annual Report

October 1999 - September 2000

IPRA Project

CIAT
Centro Internacional de Agricultura Tropical
International Center for Tropical Agriculture

ANNUAL REPORT 2000

CIAT PROJECT SN-3

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TABLE OF CONTENTS:

PROJECT SN-3: PARTICIPATORY RESEARCH APPROACHES FOR REDUCING POVERTY AND NATURAL RESOURCE DEGRADATION

PROJECT OVERVIEW

Objective: To develop and disseminate participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles that strengthen the capacity of R&D institutions to respond to the demands of stakeholder groups that contribute to improving levels of well-being and integrated agroecosystem management and conservation (IAEM).

Description. Details of the Project 's seven major outputs for the years 1999-2002 are given in the logical framework. Specific activities on a per-output basis are shown in the following abbreviated work breakdown structure for this year.

Outputs

- Participatory methodological approaches, analytical tools and autochthonous knowledge that lead to the incorporation of farmers' and other end-users' needs in IAEM, developed for interested R&D institutions
- Organizational strategies and procedures for participatory research (PR), developed
- Professionals and others trained as facilitators of PR
- Material and information on participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles, developed
- Impact of IPRA Project activities, documented
- Internal projects and other institutions supported and strengthened in conducting PR
- Capacity of the IPRA team, strengthened

Gains

- Methods available for incorporating end-user preferences.
- Participatory methods applied on a routine basis in CIAT research.
- Users involved at early stages in decisions about technology design.
- At least three universities in Latin America with capacity to teach PR
- methods.
- At least 1500 trainees and 45 trainers able to apply these methods in the region.
- Self-management increased in at least 100 communitives in at least 4 LAC countries
- Increased focus on adding value to agricultural products through microenterprises created in mature CIALs
- Lessons learned, methodologies and materials disseminated globally in conjunction with the Systemwide Program on Participatory Research and Gender Analysis (SP-PRGA) convened by CIAT and through the Farmer Participatory Research for IPM project of the Systemwide IPM Program (SP-IPM

Milestones

2000	CIAL methodology scaled up over a large geographic region in at least one NARS and one NGO. Systemwide projects have published results on impact assessment of FPR and GA in PPB, NRM and IPM. Capacity for multiplying FPR in CIALs established in 4 countries. At least 2 second-order associations of CIALs functioning. Documentation of rural agroenterprise development in at least seven CIALs in Cauca pilot zone. Pilot organizational model for 3 telecenters established in one urban and two rural sites of Cauca.
2001	Watershed organizational models are being replicated in at least two countries beyond the three pilot sites. Pilot testing of participatory methodologies for rural agroenterprise development in at least one site. Documentation of lessons learned. Participatory plant breeding approach(es) institutionalized in at least three NARS (in Africa, Asia, LAC) on a national scale. CIAL methodology pilot tested in Africa and Asia. At least 15 CGIAR and NARS IPM project leaders trained in participatory methodologies.
2002	Participatory IPM projects established in at least 5 CGIAR and NARS centers. Methods for participatory research on NRM at the landscape scale applied in at least one site.
Users	This work will benefit poor farmers, processors, traders and consumers in rural areas, especially in fragile environments. Researchers will receive more accurate and timely feedback from users about acceptability of production technologies and conservation practices. Researchers and planners will profit from methods for conducting adaptive research and implementing policies on natural resource conservation at the micro level.
Collaborators	NARS, NGOs, universities, CGIAR SP-PRGA members, SP-IPM members
CGIAR system linkages	Organization and management (70%); training (30%) Convenor of SP PRGA, Coordinator of SP-IPM project
CIAT project linkages	Inputs to PE-1, PE-3; PE-4, PE-5, IP-1, IP-2, IP-3, IP-5, SN-1, BP-1; Outputs from PE-3, PE-4, IP-3, BP-1, SN-1.

2000 - WORK BREAKDOWN STRUCTURE - PROJECT SN-3

Project Objective:

To develop and disseminate participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles that strengthen the capacity of R&D institutions to respond to the demands of stakeholder groups that contribute to improving levels of well being and integrated agroecosystem management and conservation (IAEM).

OUTPUTS	1. Participatory methodological approaches, analytical tools and autochthonous knowledge that lead to the incorporation of farmers' and other end-users' needs in IAEM, developed for interested R&D institutions	2. Organizational strategies and procedures for PR, developed	3. Professionals and others trained as facilitators of FPR
ACTIVITIES	✓ Implement institutional evaluation of logit analysis software tool for preference ranking ✓ Develop proposal for case studies on agroecosystem health ✓ Develop participatory diagnosis method and use of logit analysis software tool for preference ranking	✓ Develop strategies for concerted collective action among watershed users and other stakeholder groups ✓ Develop logframe for strengthening CIAL sustainability (second-order associations) ✓ Develop workshop on agroenterprise experience in Cauca CIALs ✓ Situation of CIALs in the countries where it has been disseminated ✓ Test methodology for an action plan in second-order organization of CIALs ✓ Develop action plan for Honduras ASOCIAL ✓ Develop strategies for promoting sustainable development; e.g. community telecenters.	✓ Training in FPR ✓ Follow-up of NARS and NGO professionals trained as trainer-facilitators of CIAL methodology ✓ Train professionals in information analysis and use of preference-ranking matrix in Venezuela and Colombia
OUTPUTS	4. Material and information on participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles, developed	5. Impact of IPRA Project activities, documented	6. Internal projects and other institutions supported and strengthened in conducting PR

ACTIVITIES	✓ Translate into English and publish CIAL Handbooks 1-7 ✓ *Prepare for* publication PR training materials ✓ Systematize Training of Trainer-Facilitators workshop to produce revised training materials ✓ Finish case study on CIPASLA ✓ Distribute software and user manual for statistical application of preference ranking, final version ✓ Update and translate into Spanish "CIALs at a glance" ✓ Write report for IDB on the extrapolation of participatory diagnoses and evaluations *of agricultural technology* with farmers	✓ Document impact of CIAL methodology in partners' institutions ✓ Terminate participatory evaluation of live barriers in CIPASLA Project area, Cauca State, Colombia ✓ Determine impact of FPR in selection of cassava varieties, EMBRAPA/CNPMF, Brazil	✓ Carry out diagnosis of IAP focus and capacity in Technology Transfer Division of CIAT-Bolivia as input into collaborative *research proposal related* to institution building ✓ Participate in meeting of R&D network on bananas and plantains in Latin America and Caribbean ✓ Participate in IX Congress of *Panela* Producers in Manizales, Caldas (Colombia) ✓ Participate on Boards of the interinstitutional CIPASLA consortium and ASOBESURCA, the community watershed association ✓ Backstop CORPOCIAL in organization of national meeting of CIALs ✓ Support Coffee Growers Federation in R&D activities for *earthquake zone* ✓ Support CORFOCIAL in agroenterprise development ✓ Standardize inputs of information from CIAL results ✓ Evaluate and select multipurpose forages for crop/livestock systems with farmer participation ✓ Support telecenters project. ✓ Training in Preference Ranking of Pathology Program members
OUTPUTS	7. Capacity of the IPRA team, strengthened		
ACTIVI	✓ Update and expand internal database ✓ Hold planning workshop for IPRA ✓ Strengthen the capacity of IPRA team in the English language ✓ Provide training on case study methodology ✓ Maintain functional structure for		

T I E S	horizontal leadership (co-coordinators) ✓ Organize series of cross-Program seminars to interchange experiences and receive training in new approaches, methodologies and analytical tools		

PROJECT SN-3 LOGFRAME FOR 2000-2002

Narrative Summary:	Measurable Indicators	Means of Verification	Important Assumptions
Goal: To develop and apply knowledge, tools, technologies, skills and organizational principles that contribute to improving integrated agroecosystem management and conservation (IAEM) and levels of well being	✓ Application of participatory methods, analytical tools and organizational principles by R&D organizations that lead to the incorporation of farmers' and other end-users' IAEM-related needs ✓ Use of Project products at additional reference sites in 2 agroecosystems (hillsides and forest margins) of CIAT's mandate in 5 years ✓ Use of Project products by a minimum of 3 institutions outside the LAC region at the end of Year 5 ✓ Improvement in the well being of the end-users at the respective reference sites	✓ Projects, plans and reports of public sector entities, donors, NGOs, grassroots organizations, second-order organizations at the reference sites and in the agroecosystems of CIAT's mandate, which refer to the use the Project's products	✓ Institutions committed to PR principles ✓ Stable institutional leadership ✓ Committed communities ✓ Favorable environmental and agrarian policies ✓ Absence of social conflict at reference sites ✓ Data available from reference sites
Project purpose: To develop and disseminate participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles that strengthen the capacity of R&D institutions to respond to the demands of stakeholder groups that contribute to improving levels of well being and IAEM	✓ No. of R&D organizations applying participatory methods, analytical tools and organizational principles ✓ No. of entities in the LAC region teaching participatory methods ✓ No. of meetings among stakeholder groups ✓ No. of participatory projects implemented by the R&D institutions	✓ Impact study ✓ Institutional reports ✓ Publications ✓ Proceedings	✓ Economic stability of institutions ✓ Financing for training activities and publication/ dissemination of materials ✓ Institutions willing to prepare and support facilitators and to share information ✓ End-users—above all the producers—willing to participate

Narrative Summary:	Measurable Indicators	Means of Verification	Important Assumptions
Outputs: 1. Participatory methodological approaches, analytical tools and autochthonous knowledge that lead to the incorporation of farmers' and other end-users' needs in IAEM, developed for interested R&D institutions	✓ No. of methodological approaches developed or adapted and of analytical tools developed for the IAEM	✓ Project reports ✓ Publications ✓ Proposals presented	✓ Funding available ✓ Staff have skills and time available
2. Organizational strategies and procedures for PR, developed	✓ WKK Project logical framework developed ✓ No. of strategies and organizational procedures for PR adopted and adapted	✓ Project reports ✓ Publications	✓ Good coordination and integration among collaborators ✓ Minimal conflicts in meeting demands ✓ Full participation of stakeholder groups ✓ Field staff fulfilling role of facilitators ✓ Data available from reference sites
3. Professionals and others trained as facilitators of FPR	✓ No. of professionals, technicians and farmer-researchers trained in PR methodology	✓ Project reports	✓ Institutions willing to prepare and support facilitators and to share information ✓ Funding available
4. Material and information on participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles, developed	✓ No. of visits to the Web sites ✓ No. of requests for materials and information ✓ No. of materials published	✓ Project reports ✓ Publications	✓ Staff have skills and time available ✓ Institutions willing to share information ✓ Internet system functioning well

Narrative Summary:	Measurable Indicators	Means of Verification	Important Assumptions
5. Impact of IPRA Project activities, documented	✓ Dependent on nature of study; e.g., in CIALs: No. of host countries, total no. (active, inactive, mature), research capacity, self-management capacity, no. of institutions participating, gender composition, diversity of research topics, no. of people and small businesses benefited, no. of community-service actions, no. of facilitators and trainers prepared, no. of second-degree organizations formed, no. of requests for publications and training materials	✓ Case studies, M&E reports and databases, impact studies	✓ Institutions willing to share ifnnromation ✓ Data available from reference sites
6. Internal projects and other institutions supported and strengthened in conducting FPR	✓ No. of internal projects supported ✓ No. of external organizations strengthened ✓ No. of participatory projects carried out by internal projects and others institutions	✓ Project reports ✓ Publications of internal projects and others institutions	✓ Projects and institutions committed to FPR ✓ IPRA staff have time available
7. Capacity of the IPRA team, strengthened	✓ No. of team meetings ✓ No. of seminars and workshops organized and/or received by the team or its members	✓ Project reports ✓ Minutes from meetings	✓ Individuals committed to the team approach ✓ Interest in continuous learning

OUTPUT 1. PARTICIPATORY RESEARCH APPROACHES, ANALYTICAL TOOLS AND INDIGENOUS KNOWLEDGE THAT LEAD TO THE INCORPORATION OF FARMERS' AND OTHER END-USERS' NEEDS IN INTEGRATED AGROECOSYSTEM MANAGEMENT, DEVELOPED FOR INTERESTED R&D INSTITUTIONS.

MILESTONES

* Strategy for extrapolating results of participatory diagnoses and evaluation of technology, developed
* Comparative analysis of end-user groups, carried out
* Stakeholder analysis in natural resource management, carried out

Participatory diagnoses of problems

Researcher: *Luis Alfredo Hernández R.*

The problems related to farming and to NRM were ranked at 14 participatory diagnosis meetings (PDMs) conducted in Honduras (Colón, the Paraíso, Lempira, Yorito and Olancho). A master list of common problems was compiled. Table 1 shows the distribution of frequencies for each one of the different problem (no. of times that a problem was mentioned in any one of the positions 1-10 on the preference-ranking matrix). The sample selected for this analysis considers a minimum of 4 points to run the regressions; in other words, the problem was mentioned in at least 4 diagnoses.

The problems identified in the diagnoses were grouped as follows:

- SOCIAL: education, housing, food security, health/malnutrition, sources of employment, low salaries, drinkable water, latrines, malaria, energy and agrarian policies
- DISEASES AND PESTS IN CROPS: diseases in crops, pests that reduce production, pests, pests in basic grains
- MONEY/CREDIT: financing, credit and economic resources
- AGRICULTURAL PRODUCTION: production of basic grains, agricultural production, costs of inputs, varieties, machinery, spraying with agrochemicals, preparation
- COMMERCIALIZATION: transportation, commercialization, intermediaries, access roads, marketing)

- NATURAL RESOURCE MANAGEMENT: erosion, deforestation, inadequate management, degraded soils, fertility, soil analyses, drought, contamination
- ANIMAL PRODUCTION: grasses, animals, milk and beef production
- OPTIONS: training, awareness of need to organize, diversification, fruits
- LAND TENURE
- STORAGE

Table 1. Matrix of applied logit analysis, the ranking of problems in seven provinces of Honduras. Yoro, Lempira, the Paraíso, Colón, Valle, Olancho and Atlántida.

Problems	Prioritization										
	1	2	3	4	5	6	7	8	9	10	Total
SOCIAL	3	1	4	2	6	2	1	1	0	4	24
CROP/PEST/DIS	0	0	1	1	1	0	1	0	1	2	7
CREDIT	2	1	1	1	0	0	2	0	1	0	8
AG PROD	2	3	1	3	1	1	1	1	0	3	16
COMMERC	1	2	1	1	1	2	0	3	2	3	16
NRM	3	4	2	4	2	2	0	2	0	3	22
ANIMAL PROD	0	0	0	1	1	1	2	2	2	3	12
OPTIONS	1	2	1	1	0	2	2	0	1	1	11
LAND TENURE	2	2	2	0	1	1	0	1	0	0	9
STORAGE	0	0	1	0	0	0	1	0	0	2	4
TOTALS	14	15	14	14	13	11	10	10	7	21	129

Figure 1 shows the trends of the problems by means of regression curves. The most important problems (with probability of being in positions 1-4) were: LAND TENURE (67%), CREDIT (62%), NATURAL RESOURCE MANAGEMENT (59%) and AGRICULTURAL PRODUCTION (56%). The problems of average STORAGE (25%) and ANIMAL PRODUCTION (8%).importance (with highest probabilities in positions 5-7) were: OPTIONS (45%), SOCIAL (42%) and COMMERCIALIZATION (31%). The problems of least importance (with greatest probabilities in positions 8-10) were PESTS (29%),

The regression analyses for each component (with the probability of being in positions 1-4) show that:

- For the SOCIAL area, water is the most important (100%), followed by health/malnutrition (75%), food security (33%) and education (25%).
- In the area DISEASES AND PESTS IN CROPS, the most important is pests and diseases in basic grains (33%).

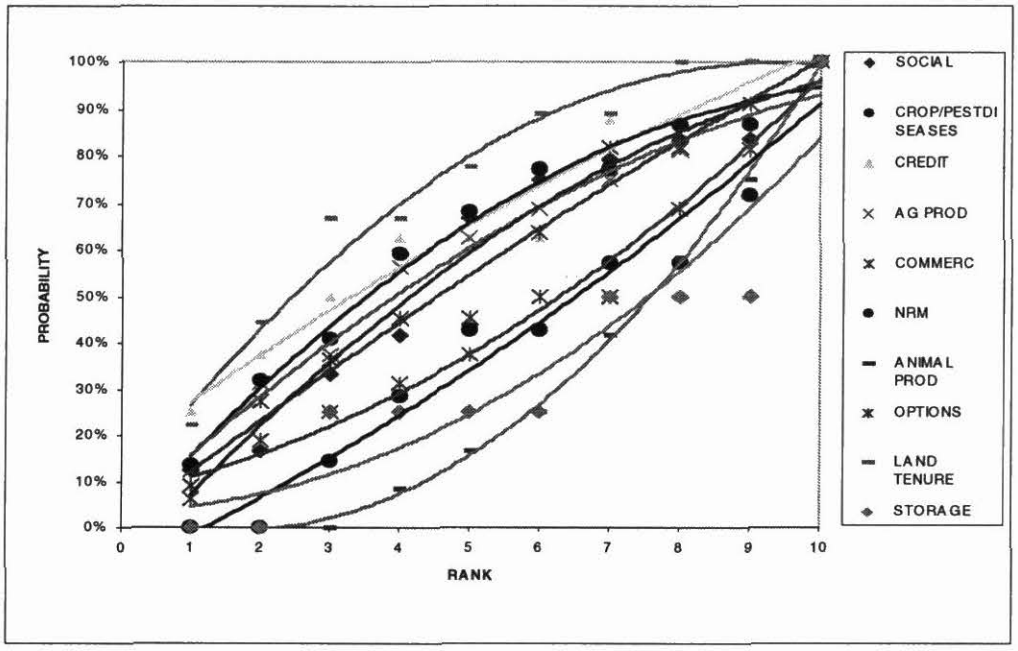

Figure 1. Matrix of logit analysis applied to the ranking of problems in seven provinces of Honduras.

- For MONEY the most important are credit (100%) and economic resources (33%).
- In AGRICULTURAL PRODUCTION, the most important are input costs (100%), variety and agricultural production (67%), and production of basic grains (33%).
- In NATURAL RESOURCE MANAGEMENT, the most important is DROUGHT (100%), inadequate management and erosion (67%), and deforestation (67%).
- In OPTIONS, the most important is training (75%), awareness of need to organize, and diversification (33%).

We can therefore reject the null hypothesis and accept that there are significant differences in the degree of importance assigned to common problems identified via PDM. The analyses of this clustering by areas gave two outstanding results:

- The results are congruent with those found for the individual analysis of each one of the components (see "Participatory diagnosis of problems, Annual report 1999 CIAT Project SN-3, p. 22).
- The analyses of the areas made it possible to identify what is the most important in each one of them; that is, when the community is referring to an area, the component that they are emphasizing can be identified specifically.

Participatory plant breeding with women and small farmers in Africa and Latin America

Researchers: *Luis Alfredo Hernández R, Hernan Ceballos[1]; Antonio López and Blanca Nohemí Florián Cortés[2]*

On the Atlantic Coast of Colombia, cassava is a major staple crop and provides an important linkage for small farmers to urban and processing markets. Close to 70% of the root production is used for direct human consumption; therefore varieties need to produce well and meet consumer preference requirements.

The project goal is to develop impact-oriented breeding methods that can deliver positive benefits to the rural poor, particularly women farmers in marginal areas.

Output 1: Comparison of methods to identify gender-differentiated preferences

- Analysis of user groups to identify types within them
- Comparison of diagnostic methods

The methodologies used in Output 1 were as follows:

- *Identification of user types*. The typology of the farmer end-users was updated doing a Rapid Rural Appraisal in the project area. To identify user types, a cluster analysis, using Ward's minimum variance (1963), was done based on preference criteria elicited in a survey.

- *Comparison of methods*. This comparison was based on two criteria:

  - A variable named "consideration," which reflects whether a preference criterion was taken into account for each diagnostic method used in the project. This variable was measured on a scale from 0 to 4, where 0 is equivalent to no consideration or no answer and 4 was answered by 100% of the people interviewed.

  - A variable named "score," which measured the quantity and quality of information for each diagnostic method. For this variable, a scale from 0 to 3 was used, where 0 means total absence of a criterion, 1 means a criterion without reason, 2 mean a criterion with reasons, but without cause-effect, and 3 mean a criterion with cause-effect reasoning.

  With these data, a multiple-correspondence analysis was carried out to identify differences between diagnostic methods used in the preferences' elicitation phase.

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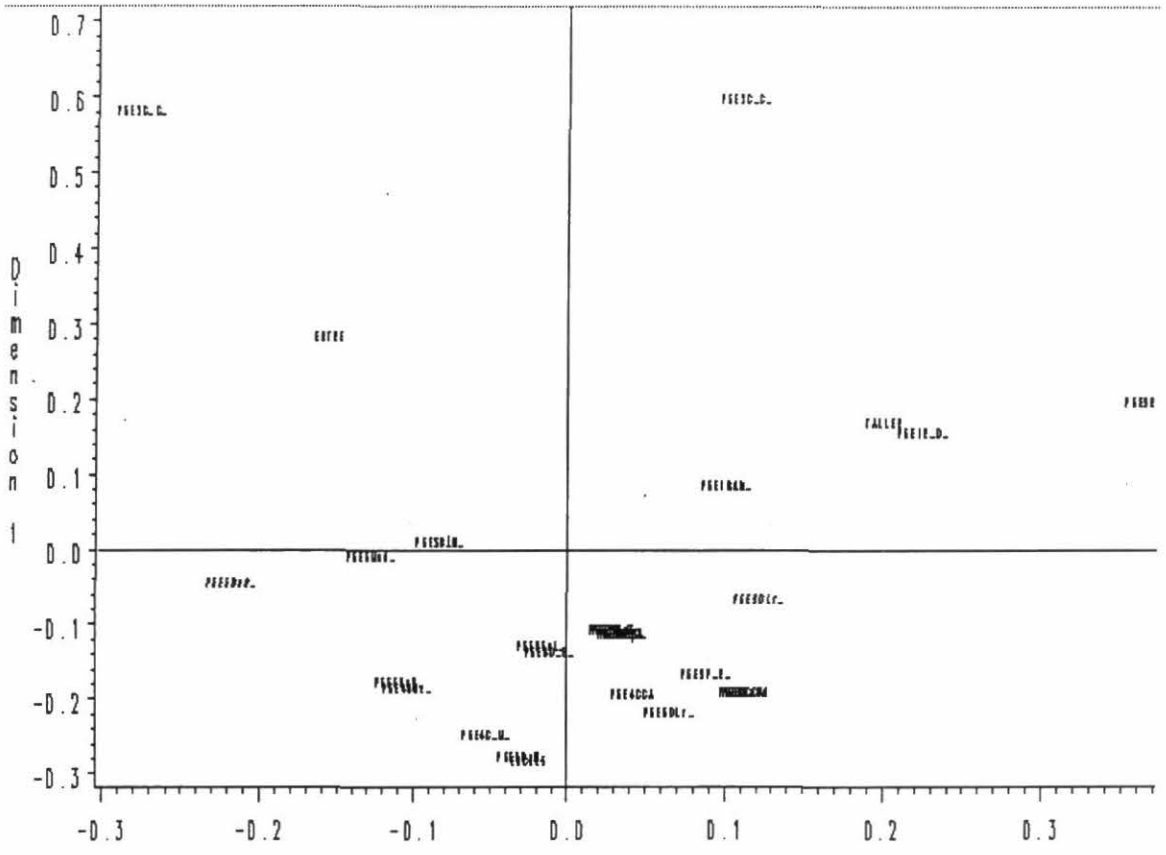
[1] Cassava Improvement, IP-3, CIAT.
[2] CORPOICA Turipaná Montería.

The results for Output 1 were as follows:

- *General users*. Farmers, middlemen, consumers, starch producers, chip producers and animal feed industry were the general users updated.
  - *Farmer types.* Based on the statistics pseudo t^2 and pseudo F and an $R^2 = 0.86$, five farmer types were identified according to preferences in six stages of cassava cycle growth. Characteristics for each type were described using frequency tables.
  - *Middlemen.* In this case, three types of middlemen explain 92% of the variability among them. This means that they have different preference criteria for buying cassava.
  - *Consumers.* With an R^2 of 0.71, four types of consumers were identified in the region. There are strong difference among consumers from a village, a small town and an urban consumer.
  - *Cassava chip and starch producers and animal feed industry.* It was impossible to run a cluster analysis because the sample size was less than 10. However, a comparative description about preferences in cassava roots was obtained.
- *Comparison of methods*. In the case of farmers, there was a preference criteria group for the different growth phases of the cassava crop, which was common to the interview, workshop and survey. However, there were criteria specifically associated with the workshop and the interview. The survey did not have discriminant criteria (Fig. 2). This means that the interview and the workshop provide specific criteria in addition to those obtained with the survey. Comparing costs, the survey provided the cheapest information per farmer, but the additional information provided by the others tools contributed to a clearer explanation of farmers' preferences.

  For the interview the criterion associated with this tool was cassava canopy diameter in the phase from 60-120 days after planting.

  At the workshop, the criteria associated with this tool were disease-free cuttings, with high latex content and resistant to drought (in the phase from cutting selection to 60 days after planting), stemborer (*Chilomima clarkeii*) resistance, thick roots, high starch content and only a few low-level branches in the phase from 120-180 days after planting.



1= workshop, 2= interviews, 3= survey

Figure 2. Multiple correspondence for *interviews, workshop and survey.*

Output 2: More acceptable and productive varieties accurately targeted and disseminated for poor women and men farmers. Farmers, intermediaries and consumers evaluated diverse genotypes.

The methodology for Output 2 consisted of a comparative analysis of farmers', industry's, middlemen's and end- users' preferences at one site (Barranquilla on the Atlantic Coast). In total 15 interviews were conducted in the different user categories (women = 4, middlemen = 3, farmers = 5, industry).

The results for Output 2 were as follows:

- *Industry criteria*. The feed industry "Concentrados del Norte," located on the Atlantic Coast of Colombia, has been testing cassava varieties MTAI 8, CM 4843-1, CM 4919-1, ICA-Costeña and ICA-Negrita. They have identified

specific requirements for these varieties, which are to be used in dehydrated feed. These clones, transferred by the CIAT Cassava Program to Concentrados del Norte, have characteristics such as a minimum of 34% dry matter (DM), low cyanogen content and an average fresh root yield of 25 t/ha (Table 2). However, these characteristics need to be confirmed with other processors.

The challenge was to determine whether the participatory methodology incorporated into cassava breeding (developed from 1986-1992) identified analyzed and incorporated end-users' criteria. It should to highlighted that new possibilities of transforming the crop from a subsistence to an income-generating alternative with varieties such as ICA-Negrita and ICA-Costeña, released through Participatory Plant Breeding processes, arose as a result.

- *Women's criteria* (fried cassava patties known as *bollos*). This evaluation revealed that women have their own selection criteria related to their particular cottage industry of making *bollos*, a typical breakfast food made from cassava and white cheese. It was evident that cassava varieties should meet certain cooking requirements such as high starch content (= good cooking quality) and uniformity of root and flesh (parenchyma) color (yellow or white) (Table 2). These characteristics result in new possibilities for cassava germplasm in relation to this industry.

  This project may also provide insight into a new perspective about cassava-related women's and family earnings on the Atlantic Coast.

  The women's families also contributed to the selection process, providing information on quality-related traits. There are areas where cassava plays an important role in more than one particular market. The broadening of the user base should be an objective in order to improve the effectiveness of the PPB methodology in the future.

- *Middlemen's and end-users' (fresh market) criteria.* The most important selection criteria for middlemen were high root DM, root morphological traits, external root (dark brown) and flesh color (white), root thickness and length, health (without diseases and insects) and an even surface with no indentations. In addition to having all the previous described characteristics, end-users prefer selecting high-yielding varieties (avg 5 roots/plant) (Table 2).

  Table 3 reveals an interesting difference among women's, middlemen's and end-user's criteria. Yellow-fleshed clone CM 6119-5 has a high acceptance among the women (for making *bollos*) in contrast to the other two groups. Yellow flesh is of intermediate acceptance. This means that for women the criterion root color could have two possibilities: white and yellow.

  None of the groups accepted a light brown color of the external root as in CM 3555-6 (intermediate to low acceptance) (Table 3).

It was evident that some cassava varieties (e.g. Venezolana, ICA-Costeña and SM 1411-5) play an important role in more than one particular market (Table 3)

The evaluation process in this project has resulted in the following specific benefits:

- Better knowledge of the market system in a given area
- Refinement f selection criteria based on cassava farmers, women, middlemen and end-users

Table 2. Comparisons among different criteria, Atlantic Coast of Colombia

Criteria	Industry	Women (Qualitative Evaluation)	Middlemen (Qualitative Evaluation)	Farmers - Fresh Market (Qualitative Evaluation)
Root DM (high starch content)	34% minimum	Good cooking quality	High starch content	High starch content
HCN (cyanide content)	Low	Not mentioned	Not mentioned	Not mentioned
Planting material (cuttings) production	Good	Not mentioned	Not mentioned	Not mentioned
Root shape	Not mentioned	Uniform	Uniform	Uniform
Fresh root yield	25 t/ha	One *carga* should produce 280 *bollos*,, selling at US$0.08 each	High	High
Root size	Not mentioned	Thick	Thick	Thick
Color of root flesh (parenchyma)	White	Yellow or white	White	White
Root length	Not mentioned	Intermediate	Intermediate	Intermediate
Health	Not mentioned	Not mentioned	Without diseases and insects	Without diseases and insects

Table 3. Comparison of preference ranking among women's, middlemen's and end-users' (fresh market) criteria, Barranquilla, Atlantic Coast of Colombia, May 2000.

Women	PR[1]	SC[2]	Middlemen	PR	SC	Farmers	PR	SC
Venezolana*	1	G	Venezolana	1	G	Venezolana	1	G
SM-1411-5	2	G	Costeña	2	G	Negrita	2	G
CM 6759-8	3	G	SM-1411-5	3	G	SM-1411-5	3	G
CM 6119-5	4	G	CM 3306-19	4	G	CM 6759-8	4	G
Costeña*	5	G	Negrita	5	I	Costeña	5	G
Negrita*	6	G	CM 6759-8	6	I	CM 6119-5	6	I
SM 805-17	7	I	CM 3555-6	7	I	SM 805-17	7	I
CM 1433-4	8	I	CM 6119-5	8	I	CM 3306-19	8	L
CM 3555-6	9	L	CM 1433-4	9	L	CM 3555-6	9	L
CM 3306-19	10	L	SM 805-17	10	L	CM 1433-4	10	L

* Varieties released.

[1] PR = preference ranking

[2] SC = rating scale, where G = high acceptance, I = intermediate acceptance, L = low acceptance.

Stakeholder analysis

Olaf Westermann[3]

***Collaborator**: Helle Munk Ravnborg*[4]

Highlights

- Paper on "Understanding interdependencies: Stakeholder identification and negotiation as a precondition to collective natural resource management," presented by Helle Munk Ravnborg at the international workshop "Deepening the Basis of Rural Resource Management," ISNAR, 16-18 Feb., The Hague and at the 8th biennial conference of the International Association for the Study of Common Property (IASCP), 31 May-4 June, Bloomington, Indiana, by Olaf Westermann
- Article submitted for publication in the international journal *Agricultural Systems*

Objectives. The research objectives were twofold:

- to continue with and publish research on collective natural resource management (NRM) initiated in Colombia
- to strengthen a project proposal for a collaborative research program called "Landscape management: Between consensus and conflict" between CIAT,

[3] CIAT Hillsides Project PE-4.

[4] Centre for Development Research.

the Center for Development Research (CDR-Denmark) and various universities in Denmark and Tanzania, submitted to DANIDA 1 October 1999

Methods. Fieldwork was conducted in collaboration with Helle Munk Ravnborg (Center for Development Research, Denmark) in Nicaragua from 1 Nov.-4 Dec. 1999. Two sites were selected; the community of Puertas Azules in the Natural Reserve called Miraflores in the district of Estelí and the community of El Zapote in the municipality of San Dionisio. The research sites were dominated by small-scale farmers and selected according to their importance as reference sites for DANIDA, Estelí and CIAT, Nicaragua, respectively. The basic methodologies used were parts of a stakeholder analysis methodology (Ravnborg et al 1999[5]) and a method for defining local development indicators both previously developed at CIAT-Laderas (Ravnborg 1999[6]).

Rationale and justification. Intensified cultivation of riverbanks and valley bottoms cause problems of erosion and depletion of the water supply and pollution further downstream. Crop damage caused by pests and diseases suddenly escalates, either due to the occurrence of new pests and diseases or due to the sudden escalation of already known ones. These are just some examples of the spatial and temporal interdependencies that characterize NRM and which are accentuated as land use intensifies. What happens at one point in time or in one part of the landscape affects and is affected by what happens at other times or parts of the landscape. Some of these temporal and spatial interdependencies are immediately visible, while others such as the relationship between landscape diversity and structure and the occurrence of specific crop pests and diseases are more complex and subtle.

The complex and subtle nature of the biophysical interdependencies at play in determining many NRM problems is, however, not the only factor complicating improved NRM. Particularly in hillside regions, agricultural landscapes are fragmented among numerous users; that is, numerous individual decision-makers. Thus, even if the biophysical interdependencies related to a specific NRM problem are recognized, their effective management requires the individual farmer to coordinate his or her resource management with that of neighboring farmers.

This brings a second set of interdependencies into play; namely, the socioeconomic interdependencies that exist between individual landscape users. Some farmers depend fully or partially on others for their livelihood; e.g. through their employment as day laborers or the provision of informal loans; farmers may

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[5] Ravnborg, H, Guerrero, M del P & Westermann, O. 1999. "Acción colectiva para el manejo de los recursos naturales: Manual para identificar grupos de interés." Centro Internacional de Agricultura Tropical, Cali, Colombia.

[6] Ravnborg, H. 1999. "Developing Regional Poverty Profiles Based on Local Perceptions", Centro Internacional de Agricultura Tropical, Cali, Colombia.

belong to different ethnic or religious groups, which may complicate communication and thus coordination between them; previous experiences of cooperation among farmers may have failed. These and other factors shape the individual farmer's willingness to engage in coordinated or collective NRM and thus the ability to manage the biophysical interdependencies inherent in many NRM problems.

Outputs. The paper presents a stakeholder analysis methodology (Ravnborg et al 1999), which through a process of continuous and iterative eliciting of individual farmers' perceptions and interests with respect to their own resource management – *their constructions* – and contrasting these with those of other farmers forms the basis for joint appreciation and analysis of the biophysical as well as social interdependencies involved in NRM.

Underlying the methodology is the assumption that it is the individual farmer's perception of a variety of factors such as biophysical processes relating to NRM problems, security of land tenure and market developments, which—combined with his or her resource endowments and obligations—make him or her act; that is, pursue a specific resource management strategy. Thus an important element in efforts to improve NRM is the eliciting, contrasting, enriching or exploring in depth (based on information from elsewhere; e.g. research) and negotiating these individual understandings of NRM.

It is argued that recognizing and understanding not only the interdependencies that exist among different parts and resources within the landscape but also among the individual resource managers are crucial to solving those NRM problems that require coordinated or collective management. The paper consists of two parts: The first part presents the stakeholder analysis methodology and its theoretical basis, while the second part presents examples of its application, particularly how understandings of biophysical and social interdependencies emerged and were negotiated.

The collaborative project proposal and the primary results of the fieldwork were presented at the local DANIDA office in Estelí at the beginning of December. Although the proposal raised extensive local interest for further collaboration, it was not approved by DANIDA in Denmark. Based on the experiences obtained, it was felt that these research issues were very pertinent and worthwhile pursuing. This resulted in a postdoctoral program for Helle Munk Ravnborg on organizing practices, and a PhD proposal for Olaf Westermann on the importance of social capital in collective water management, which was submitted to DANIDA for approval on 1 October 2000.

CIAT's stakeholder watershed management approach

Olaf Westermann[7]

Cross-references: *Nancy Johnson, Annie Jones and Jose Ignacio Sanz*[8]

Highlights

- Poster prepared on CIAT's stakeholder watershed management approach and presented at the Technical Workshop on Watershed Management Institutions sponsored by CAPRi (Systemwide Program for Collective Action and Property Rights) and organized by CIAT on 14 March, 2000.

Objectives

- To present CIAT's approach to watershed management as a contribution to the first objective of the workshop
- To review the experiences of the CGIAR and other key institutions on watershed management research, particularly research on the institutions that affect watershed management.

Methods. The poster was based on the booklet called "Land discovery: Training and tools for decision support to stakeholder watershed resource management."[9] The stakeholder watershed management approach was presented to a group of watershed management researchers from different CGIAR organizations[10] and universities from all over the world at the reference sites in San Dionisio.

Outputs. The elaboration of a watershed management approach is a continued effort guiding the Project's research and at the same time benefiting from its outputs. At the workshop a presentation was also made as a starting point for discussing participatory watershed management and research. Based on this presentation a paper is being written in collaboration with Nancy Johnson (BP-1), Helle Munk Ravnborg (CDR) and Kirsten Probst (Systemwide Program for Participatory Research and Gender Analysis-PRGA), which will be submitted to the international journal, *Water Policy*. This paper will include an analysis of CIAT's stakeholder watershed management approach in relation to participation and research.

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[7] CIAT Hillsides Project PE-4.

[8] BP-1, Editor and Project Manager, PE-3.

[9] Annie Jones et al. 2000. Land discovery: Training and tools for decision support to stakeholder watershed resource management. Centro Internacional de Agricultura Tropical, Cali, Colombia. Forthcoming.

[10] ICLARM, IBSRAM, ICRISAT, CAPRi, ICRAF, ICLARM, ICARDA and IFPRI, as well as Cornell University, Michigan State University, the Institute for Social Research-Kampala and the University of British Colombia.

Interinstitutional consortium

Olaf Westermann[11]

- *Objectives*

- To improve coordination and collaboration among institutions and between institutions and community organizations in order to promote sustainable development
- To facilitate local processes in order to improve the representation and communication of local needs at regional and national levels
- To improve access, adaptation and diffusion of new knowledge, information and decision-making tools to strengthen institutional capacity to support local sustainable development processes
- To develop an appropriate scheme for interinstitutional coordination on a territorial basis that fosters the level of human and social capital and that can be replicated in other geographical regions (upscaling)

[11] Hillsides Project, PE-3.

Table 4. Logframe for project activities.

Intermediate Outcome	*Indicators*	*Means of Verification*
1. Demand for interinstitutional coordination identified or requested by local and external institutions as a result of local development processes and analysis	✓ Need identified by participatory planning by objectives (PPO)	✓ Documentation of PPO.
2. Institutional and stakeholder analysis facilitated and potential stakeholders with common interests (based on common visions and development principles), identified	✓ Institutions working in the reference sites identified and characterized by interest	✓ Documentation of stakeholder analysis
3. Stakeholders aware of institutional and personal strengths and weaknesses (including research, development and organizational capacity)	✓ Level of awareness among institutions	✓ Matrix of institutional activities with discussion (competition or conflicts among objectives and clients, relevance of activities to client needs and effectiveness)
4. An informal/formal forum for exchanging experiences among existing institutions facilitated.	✓ % institutions identified and selected that participate in Consortium meetings and events continuously ✓ A working relationship[12] among institutions (yes/no - type) ✓ % institutions with working relationships ✓ Public collaborative agreement (yes/no)	✓ Participants list of meetings ✓ Venn diagram and analysis of institutional linkages through semistructured interviews (SCAT[13]- organizational profile)
5. Improved operational collaboration[14] among institutions working in the same geographical area, resulting in better dialogue and coordination among institutions working in the same geographical area.	✓ Increase in no of collaborative activities[15] over time ✓ No. of proposals written by 2 or more institutions ✓ No. of projects executed by 2 or more institutions	✓ Small group discussions on the theme of collaboration[16] ✓ Project proposal documents ✓ Venn diagram and analysis of institutional linkages and collaboration through semistructured interviews (SCAT- organizational profile)

[12] A working relationship is defined as sharing of work-related experiences

[13] Social capital assessment tool

[14] An operational collaboration is defined as ranging from coordination of common activities, sharing of resources, to writing and executing project proposal collectively in order to increase effectiveness.

[15] Collaborative activities are specific tasks organized by 2 or more institutions (e.g.. workshops, fieldwork).

[16] Brainstorming on the meaning of collaboration and grouping by themes (working together, sharing resources, project coordination and implementation, funding, etc.) - *"Getting a common definition of collaboration."*

Intermediate Outcome	*Indicators*	*Means of Verification*
6. Institutions work according to shared working and ethical principles of collaboration[17] (5)	✓ Inventory of principles and checklist indicators ✓ % checklist of indicators accomplished	✓ Documentation of workshop and checklist indicators for each principle ✓ Analysis of activities in relation to application of checklist indicators
7. Growing institutional awareness and application of participatory principles, implying acceptance of full participation of community organizations in decision-*making*	✓ Institutional definitions of *participation* ✓ Participatory approaches used in project implementation ✓ Community organizations' perception of involvement in decision-making ✓ No. of decisions taken in a participatory manner	✓ Group discussions on theme *of community participation*,[18] resulting in construction of conceptual framework ✓ Analysis of participatory processes applied in selected collaborative projects, based on the above conceptual framework
8. A minimum capacity for community participation on decision-making processes achieved, resulting in improved dialog and coordination with the interinstitutional forum	✓ Quality of participation of community organizations	✓ SCAT organizational profile, Section C
9. Operational collaboration[19] among institutions working in the same geographical area and the community organizations, improving the relevance of institutional interventions to community needs and their effectiveness.	✓ No. and characteristics of relationships between community organizations and institutions ✓ Clarity of roles ✓ No. of shared responsibilities and activities (more = better), especially participation on *different* levels and activities such as diagnosis, analysis, planning, and monitoring and evaluation).	✓ SCAT organizational profile ✓ Nature of relationships between institutions and community groups explored, usingVenn diagram ✓ Analysis of institutional collaboration with communities and institutions with focus on roles, rights and responsibilities to explore relationships (focus group interview following the Venn diagram) (SCAT-organizational profile) ✓ Yolanda Wadsworth's open inquiry evaluation methodology[20]

[17] Working and ethical principles should include things such as "collaboration" and "participation."
[18] Brainstorming on the meaning of "community participation" - *"Getting a common definition of participation"*
[19] Operational collaboration defined as ranging from coordination of common activities, sharing of resources, to writing and executing project proposal collectively in order to increase effectiveness.
[20] Yolanda Wadsworth "Everyday Evaluation on the Run". What are we doing together, How is it going, Why is it going that way, How do we know (signs), What are we gaining from it, and What can we change/do differently?

Intermediate Outcome	*Indicators*	*Means of Verification*
10. Processes for consensus building and coordination among existing institutions and community organizations results in the generation of a common vision, goal and strategies for community development among the different stakeholders	✓ Common vision statement (yes/no) ✓ Process for generating the vision	✓ Document/report ✓ Mapping process for generating the vision.
11. Local processes of community representation and improved communication of local needs at the regional and national levels are developed	✓ No. of community projects presented to regional and/or national governments ✓ % community projects funded by regional and/or national governments ✓ No. of community members participating in local, regional or national governments	✓
12. Complementarities and synergies among institutions, and between institutions and community organizations, improve institutional relevance, coverage, effectiveness and representation	✓ % duplication of activities ✓ % needs identified in the PPO that are (not) being responded to (i.e. gaps exist) ✓ Examples of how organizational behavior have changed (how they worked before vs now).	✓ Retrospective analysis of previous variables (present-past comparisons) ✓ Matrix of institutional activities with discussion (competition or conflicts among objectives and clients, relevance of activities to client needs and effectiveness)
13. Institutions and community organizations cooperate towards the achievement of the common vision, goals and strategies	✓ Level of commitment of institutions and community organizations to the vision (visible by changes in organizational priorities and activities in line with the common vision)	✓ Focus group discussions within institutions to identify changes in goals and agendas towards the common vision

OUTPUT 2: STRATEGIES AND ORGANIZATIONAL PROCEDURES FOR PR, DEVELOPED

MILESTONES

* Self-systematization of small-business experiences existing in the CIALs from Cauca, Colombia, carried out
* Diagnosis on situation of the CIALs in Nicaragua, Honduras, Ecuador and Colombia
* Project for sustaining CIALs, approved
* Diagnosis on situation of the CIALs in Nicaragua, Honduras, Ecuador and Colombia
* Preliminary guidelines for establishing an action plan for second-degree farmer organizations, approved
* Diagnosis on situation of the CIALs in Nicaragua, Honduras, Ecuador and Colombia
* Bargaining capacities of community organizations to negotiate with
* external agents, increased
* Representative local structures developed in order to improve the communication of local needs to external support agents and the bargaining power of local actors

Making small business dreams come true in the field: Self-systematization of small-business experiences existing in the CIALs from Cauca, Colombia as a support tool for constructing future visions

José Ignacio Roa and Alfonso Truque
Collaborators:
Mark Lundy, Fredy Escobar, Nolberto Zambrano[1]

Table 1 provides a synthesis of activities carried out under the CORFOCIAL-Chorlavi agreement and the results of the same.

[1] SN-1, SN-3 and CORFOCIAL, respectively

Table 1. Synthesis of activities carried out and the results of the same.

ACTIVITIES PROPOSED INITIALLY	ACTIVITIES CARRIED OUT	RESULTS
1. Workshop with participation of 2 representatives from each of the 12 micro-enterprises to be studied, as well as the coordinator of CORFOCIAL and 2 scientists from CIAT	✓ Workshop held from 31 Jan.-1 Feb. in Piendamó, Cauca, with participation of 10 microenterprises and 24 representatives.. ✓ Socialization of project, clarification of doubts and generation of commitments. ✓ Presentation of each microenterprise and horizontal exchange of concepts ✓ Design of the study guide by CORFOCIAL and CIAT	✓ Socialization of the project among the participants ✓ Generation of information on lessons learned. ✓ Horizontal exchange of these concepts to generate concepts in common ✓ *Design of study guide*
2. Application of the study guide by each micro-enterprise with the support of CORFOCIAL	✓ Meetings with 10 small businesses to apply the study guide, which has been used with 71 members of small businesses (32 men and 39 women) for their crops of maize, common beans, soybeans, blackberries and processing of organic *panela*, a noncentrifuged brown sugar patty	✓ Definition of term "success" for each small business ✓ Recommendations on what to do/not to do when forming small businesses ✓ Compilation of each small business' history and its members
3. Systematization of the results obtained from the case studies.	✓ Systematization of information generated through application of the study guide to the 10 small businesses	✓ Proceedings generated by the 10 businesses studied
4. Workshop to present, analyze and discuss the results of the studies	✓ Workshop held from July 27-28 in Popayán (Cauca) with the participation of 20 people from 10 small businesses ✓ Group work	✓ Strengths/weaknesses of small businesses identified ✓ Key factors of success (seed production, management, training, marketing, time available, closeness to community, research and personal improvement), defined ✓ Steps defined for forming small business as part of CIAL ✓ Training needs defined ✓ *Level of community interest measured* ✓ CIAL functions defined ✓ Objectives of the small business defined ✓ Internal norms prepared ✓ Work and activities planned ✓ Inventory of assets taken ✓ Activities initiated ✓ Outcomes evaluated ✓ Business analyzed ✓ Benefits obtained from the small business, made known

ACTIVITIES PROPOSED INITIALLY	ACTIVITIES CARRIED OUT	RESULTS
5. Workshop on future visions for the small businesses in rural Cauca.	✓ Held in Popayán (Cauca) from 21-22 Aug. ✓ Individual work by each small business to determine its weaknesses, opportunities, strengths and threats (SWOT analysis) ✓ Conferences on: ✓ Marketing studies ✓ Organic medicinal herbs, a true experience	✓ Primary information on the SWOT of small businesses, generated ✓ Interest in organic crops ✓ Interest in visiting the marketing sites ✓ Strategic planning guide designed

Status of the CIALs implemented in Central America

Carlos Arturo Quirós and José Ignacio Roa

Collaborators:

Juan González,[2] José Jimenez,[3] Fredy Sierra,[4] Nelson Gamero,[5] Carlos Amaya,[6] Pablo Selan,[7] Daniel Selener,[8] Verónica Proaño,[9] Hector Andrade,[10] Humberto Fierro,[11] Manuel Arévalo[12]

Efforts by CIAT to initiate the development of participatory methods in Mesoamerica, in which the farmers play an active role in the decision-making related to research processes, began in 1993. There were already a number of methodologies that attempted to involve the producers and that formed part of the "fan" of alternatives available to R&D projects. But it wasn't until 1996 that the opportunity for the mass dissemination of the CIAL methodology was made possible through the Kellogg Project "Dissemination of a model for developing agricultural technology at the level of the community, using a participatory approach."

There were a number of obstacles that had to be overcome in this expansion process, including institutional instability, turnover of agronomists, the lack of commitment on the part of some NGOs, and reluctance to change. Despite these difficulties and given the large number of institutions that saw in the methodology tools and virtues that met many of their needs, the CIALs were introduced into the Central American environment.

Today there is a team of professionals trained in the CIAL methodology, primarily in El Salvador, Nicaragua and Honduras, who have formed considerable number of CIALs that are carrying out research projects arising from their communities concerns.

A brief summary is given of the status of the methodology in Honduras and Nicaragua, which will be the target of the next phase of the project: "Sustaining CIALs," recently financed by the Kellogg Foundation.

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[2] Investigación Participativa en Centro América (IPCA).
[3] Ibid.
[4] Ibid.
[5] Procuencas/Zamorano
[6] Sociedad Cristiana para el Desarrollo (SCD) en Laderas.
[7] Programa de Reconstrucci[on Rural (PPR).
[8] International Institute of Rural Reconstruction (IIRR)-Ecuador
[9] Ibid.
[10] Fortalecimiento de la Investigación y Producción de Semilla de Papa (FORTIPAPA).
[11] Corporación Colombiana de Investigación Agropecuaria (CORPOICA).
[12] Ibid.

Honduras. Table 2 shows the number of existing CIALs, the institution and the agronomist who facilitated the process, its composition with respect to gender, the research topic and the number of families directly related to the Committee that does the research.

Photo 1. CIAL Pinabete Playa del Río Salado and the IPCA agronomist, Juan González, planting nurseries of sweet bell peppers for the next research trial.

At present Honduras has 62 groups of which men make up 25.8%, 16.1% by women and 58.1% are mixed groups. The number of families directly related to the CIALs total 582, for an average of about 9 people per group. This figure indicates that many people are sufficiently interested in the Committee to accompany it continually, in addition to those people who are being exposed to the generation and development of technologies. At the end of each cycle, every CIAL should hold a meeting to communicate the results to the community, at which at least 15-25 families attend per meeting, which increases that figure by 1000-1500 farmers more who are involved in the process.

Initially, the research topics preferred by the communities were related to maize and common beans, basic staples in their diet and trying to solve the problem of their families' food security. Today, as can be seen in Table 2, there are a large variety of topics and crops in which the farmers are interested in innovating or resolving the community's concerns.

Today there is a team of trained professionals who are applying the CIAL methodology in their respective work area. Their informal group, known as TecniCIAL, applies the CIAL methodology. Their meetings are held every 2-3 months in some of the regions where there are CIALs for analyzing and discussing the accomplishments and/or problems related to the implementation of the methodology. This organization originated from the meetings that the IPRA team held during the monitoring and follow-up during the dissemination phase.

Other accomplishments include:

- Seven institutions in Honduras are applying participatory methods in their R&D agenda. Trainers have been prepared in the methodology, and they have carried out several events for other agronomists and local institutions
- The EAP (Escuela Agrícola Panamericana) at Zamorano has included in some of their training events the topic of PR. The Centro Universitario de la Región del Atlántico is also including the topic of PR in their curriculum.
- Thus far, three National CIAL Encounters have been held for a greater dissemination of the results.
- There are four regions or focal points for expanding the CIAL methodology in Honduras: Santa Bárbara, Yoro, Francisco Morazán and El Paraíso. An ASOCIAL (Asociación de CIAL) is being formed in order to establish alliances and agreements with other institutions in the search of self-reliance.
- At this point the farmers have begun to test different technologies or nontraditional crops other than the traditional staples of common beans and maize.
- Some groups have begun their research in what has been called ecological agriculture, growing natural products with no contaminants and at very low costs.
- Two groups have begun training and artisanal seed production as a result of their research.
- The CIALs have been recognized by many other institutions that work in their region or in neighboring areas and are constantly visited or invited to participate in important agricultural and livestock events for presenting or discussing their results.
- Parallel to the research projects, the Committees are carrying out their productive projects as an incentive for the group and at the same time support the investment that are made in the research projects.
- The participatory evaluations of technology are already on the agendas of several institutions that recognize the value of the criteria of the farmers who will be the end-users.

Table 2. Breakdown, by institution, of information on CIALs, their gender composition, no. of families involved, and their research topics.

Institution	Agronomists	Men's	Women's	Mixed	Research Topics	No. of Families involved
		CIALs				
IPCA (Investigation Participativa en Centro América)	Fredy Sierra, José Jiménez, Juan González	3	5	20	✓ Evaluation of highland rice varieties ✓ Evaluation of highland tropical maize varieties ✓ Evaluation of highland maize varieties ✓ Characterization of two landrace maize varieties ✓ Evaluation of common bean varieties ✓ Improvement of the common bean var. "Concha Rosado" ✓ Artisanal production of common bean seed ✓ Evaluation of soybean varieties ✓ Evaluation of cassava varieties and preparation of the soil ✓ Evaluation of sweet potato and taro (*Colocasia esculenta*) varieties ✓ Evaluation of hot pepper varieties ✓ Control of *Plutella xylostella* in cabbage with natural insecticides ✓ Evaluation of the effect of burning and the no. of burnings ✓ Fertilization of highland maize ✓ Fertilization of carrots ✓ Evaluation of 4 planting dates	269
USAID Project "Watershed Management" at Zamorano	Nelson Gamero	2		7	✓ Evaluation of cassava varieties ✓ Evaluation of maize varieties ✓ Evaluation of bean varieties ✓ Evaluation of varieties of bananas and	58

Institution	Agronomists	Men's	Women's	Mixed	Research Topics	No. of Families involved
		CIALs				
					plantains ✓ Evaluation of potato varieties	
IIRR (International Institute of Rural Reconstruction)	Pablo Zelan Mejía	2	2	1	✓ Evaluation of maize varieties ✓ Evaluation of highland maize varieties ✓ Effect of the phases of the moon on the planting of radishes	33
SCD (Sociedad Cristiana para el Desarrollo) - Hillsides	Carlos Amaya, Cristóbal Barahona	5	3	7	✓ Evaluation of maize varieties ✓ Evaluation of cassava varieties ✓ Artisanal production of common bean seed ✓ Comparison of traditional and technical management on the common bean crop	178
IHDER (Instituto Hondureño de Desarrollo Rural)	Edwin Amaya	1			✓ Quality of maize seed	8
World Neighbors	Santiago Pineda, Marcial López	3		1	✓ Maize and common beans	36
	TOTALS	16	10	36		582

Obstacles to be overcome include:

- Apply the criteria for selecting communities and motivating them better in order to minimize the cases of CIALs that become inactive because of a deficiency in their application and/or explanation in the meetings with the communities that are approached about forming a CIAL
- Continue identifying the strategies for integrating, each time more, the community in the CIAL events and activities to extend their local coverage.
- Strengthen the knowledge of the methodology of PR of the Committees to guarantee the results of research and their stability in the community
- Identify mechanisms of self-financing that permits the farmers groups to establish and maintain sufficient funds for the research.
- Achieve institutional stability in order to provide continuity to the projects initiated with the farmers
- Provide the regional ASOCIAL with sufficient accompaniment by agronomists and business expertise so that they can achieve their consolidation and functioning in search of the CIALs sustainability
- Establish mechanisms of participatory monitoring and evaluation that enable the groups to do their own analyses and obtain results for improving the groups' conditions as such.

Nicaragua. The CIAL methodology was first implemented in Nicaragua in August 1996. At that time, a group of 17 agronomists from 8 national institutions were trained. Here it was decided to use a passive monitoring and follow-up system with much more independence in the use of the methodology by the institutions. This latter fact—together with institutional instability and not having done the course at the time established in the yearly operational plan—resulted in the methodology not being widely applied by the participating institutions.

Despite the foregoing, there are three institutions that are applying the methodology with great success and interesting results: INPRHU (Instituto de Promoción Humana), UNICAM (Universidad Campesina) and the CIAT Hillsides Program in Nicaragua (Table 3). In contrast to Honduras, these institutions have been working isolated from one another; therefore, there has been no exchange of experiences among the different groups of farmers or their agronomists.

In order to learn about the situation of the CIAL in San Dionisio, an event was organized in which the farmers could express freely their concepts, both positives and negative, related to their CIAL. They are also asked to suggest possible solutions. A total of 26 farmers, representing 9 of the 12 CIALs existing in this region of the country, participated.

Table 3. Institutions, number of CIALs and crop on which research is currently being done by the Committees in Nicaragua.

Institution	Current No. of CIALs	Crop on Which They Conduct Their Research
INPRHU	5	Maize, control of *Spodoptera frugiperda* and common beans
UNICAM	17	Common beans, sorghum, green manure, compost, IPM with natural insecticides, association of crops and control of slugs
Hillsides/Nicaragua	12	Rice, common beans, soybeans, maize
TOTAL	34	

Photo 2. Farmers participating at the CIAL encounter in San Dionisio, Nicaragua.

The main objective of the meeting was to diagnose the situation of the CIAL by means of group analysis (only the farmers; the agronomists acted as facilitators), which was later presented in plenary. A summary is presented of the results obtained in response to the question: What are the positive aspects of their CIAL?

- The community works better when it is organized.
- There is motivation and a desire to work
- There are more opportunities to interact with other people in the community. The knowledge and results are shared with the farmers and CIALs from other zones. New people are joining the CIALs.
- They receive visits from agronomists and paraprofessionals, who help them have more experiences and feel more opportunity. They have had the chance to visit other communities.
- There are more relations with the institutions and, consequently, greater exchange of knowledge.
- They have learned to select the best variety and learn about new crops.
- They learned to manage their crops, know about the type of soil, combat pests with organic products.
- They learned to process some products of crops such as soybeans.
- They have greater knowledge about crop diseases
- Women are participating
- From an economic standpoint, they have been able to maintain the initial research fund.
- Their work has resulted in development.
- They expect good results with the research
- They are looking forward to new experiences, new knowledge.
- Negative aspects of their CIAL include:
- Some members of the CIAL do not participate in the meetings because they have commitments or positions with other programs or organizations, resulting in deficient follow-up of the work.
- Lack of communication among the leaders of some CIALs
- Lack of responsibility on the part of some members of the CIALs
- Lack of knowledge or interest on the part of the community in some work carried out by some CIALs
- On some occasions, lack of coordination between the community and the CIAL
- Lack of training in PR and the use of the handbooks for all the members that collaborate with the CIAL.
- New members, who do not have a good knowledge of the CIAL methodology, want to pass to production lots without small-scale trials and confirmation plots.
- The people do not like to do research on a small scale.
- They are not conducting trials on other crops such as vegetables and grasses
- Limitations of land for establishing the trials, and those who do have land have not joined the CIALs

- Expand the CIAL activities toward other components of community development.
- The institutions do not fulfill their obligations; e.g., the National CIAL *encounter.*
- Sometimes the agronomists visit only the coordinators to conduct surveys, and they do not go to the other farms to taken them new knowledge.

Alternative solutions suggested by the farmers include:

- The farmers from the CIALs should be models for the rest of the community.
- Have the option to change the persona who is not interested
- Speak with the members of the Board of Directors who are not participating and remind them of their commitment.
- Dialogue
- Give the members sufficient training.
- More organization of the group, make sure that everyone collaborates.
- Have the Board meet to prepare the budget required for research and present it to the respective agronomist.
- Plan the work ahead of time.
- Communicate the different activities to the community at least 8 days ahead of time.
- Educational tours or exchanges that motivate the community, obtaining more convening power.
- Promote cultural acts, videos, parties and let people know what the CIAL is and what it does.
- Carry out a workshop on organizational aspects and research.
- The CIAL carries out activities with the community for technical assistance.
- Training workshops in pastures, setting up trials, seed quality, not burning.
- More training on how to manage the crops better.
- Expand the program to include credit, follow-up to credit, gender analysis, soil conservation.
- Seek financing for production-oriented projects: crops, swine and layers).
- CIAT provides new varieties for research.
- Seeds to reforest
- Do work with pastures in the communities because they have a lot of animals.
- Intercede with other organizations so that they can buy land for those who do not have it.

Status of the CIALs implemented in South America

Ecuador. At present the CIAL methodology in Ecuador has advanced greatly by means of institutions such as the International Institute of Rural Reconstruction

(IIRR) and the Instituto Nacional Autónomo of Research Agropecuaria (INIAP). These organizations with different objectives—extension and R&D, respectively—have accomplished important things in their areas, which have permitted the formation and strengthening of various groups, especially in Indian communities. In conjunction with other partner organizations, they are working with the farmer groups on a great variety of topics in search of viable alternatives for their communities (Table 4).

Table 4. Institutions, agronomists, number of CIALs and research topics of the groups formed in Ecuador.

Institution	Participating Agronomists	No. of CIALs	Research Topics
➢ **IIRR** ➢ **FUNAN,** Fundación Antisana ➢ **INIAP** ➢ **FORTIPAPA** (Fortalecimiento de la Investigation y Production de Semilla de Papa) ➢ **MAG** (Ministerio de Agricultura y Ganadería) ➢ **UNOCANC** (Unión de Organizaciones Campesinas del Norte de Cotopaxi) ➢ **DIPEIB-C** (Direction Provincial de Education Intercultural Bilingüe) ➢ **Consorcio Carchi** ➢ **Proyecto MANRECUR** ➢ **APAE,** Asociación de Promotores Agro-forestales del Ecuador ➢ **DFC,** Desarrollo Forestal Campesino	20	36	✓ Adaptation of snails to their conditions ✓ Resistance to pests and diseases in potato varieties ✓ Resistance to "lancha" (*Phytophthora infestans*) in potatoes ✓ The most effective fungicide against the "lancha" ✓ Fruit trees adapted to the zone ✓ Organic fertilizers evaluated for yield and cost ✓ Different crosses of guinea pigs ✓ Varieties of blackberries ✓ Traditional vs. alternative management for milk and beef production ✓ Performance of tomatoes in the glasshouse ✓ Organic control of diseases in tree tomatoes ✓ Chemical vs. organic products for controlling diseases in broad bean varieties ✓ Pea varieties ✓ Effect of chemical vs. organic fertilizer on flavor and production in potatoes ✓ Production of humus with different local raw materials ✓ Rates of humus production in blackberries ✓ Two treatments for controlling white grubs (*Premnotrypes borax*) in potatoes ✓ Profitability of broad beans in an agroforestry system ✓ Rations for guinea pigs ✓ 4 races of guinea pigs ✓ Adaptation of rabbits for meat production

Preliminary results were as follows:

➢ There is a team of professionals capable of disseminating the CIAL methodology and of implementing projects directly with the communities.

- Although the agreement signed with the partners ended in 1999, the implementation of the methodology has continued to expand.
- Both formal and informal agreements have been established for coordinating the development institutions interested in implementing PR in agriculture in their institutional programming.

Photo 3. CIAL "El Condor," Pintag, Pichincha (Ecuador) in front of the shed where the guinea pigs from their trial are kept.

- IIRR is supporting the Program for Training Agroforestal Paraprofessionals at the Universidad de Loja in their distance education program, preparing the *PR in Agriculture* module.
- The application and adaptation of the methodology in development projects by institutions such as FUNAN, which work with communities in buffer zones in conservationist projects.
- The participation of women in the CIAL project has increased considerably, and there have several groups. Different from the men's groups, the women tend to do research on aspects that are directly related to the improvement of their family's diet.

Colombia. CORPOICA, after having tested the CIAL methodology in various parts of the Cundi-Boyacense savanna, has adopted it as one of their strategies within their National Technology Transfer Plan. With this tool, they expect to link

the R&D areas very closely, which is fundamental to their operational structure. Table 5 shows the research topics being addressed by the different CIALs.

Table 5. Research topics being addressed by the different CIALs in Colombia.

CORPOICA	Participating Agronomists	No. of CIALs	Research Topics
➤ Region 1, Cundina-marca and Boyacá ➤ Region 7, N&S Santander ➤ Region 3, Valledupar ➤ Region 6, Tolima	18	31	✓ Varieties of papaya ✓ Varieties of melon ✓ Varieties of rice ✓ Varieties of maize ✓ Varieties of tomatoes ✓ Varieties of bananas ✓ Varieties of plantains ✓ Varieties of green onions ✓ Varieties of grasses for cutting ✓ Varieties of alfalfa ✓ Methods of improving pastures ✓ Varieties of lulo (*Solanum quitonense*) ✓ Effect of planting distance on fruit drop in lulo ✓ Effectiveness of two planting depths in controlling the moth *Tecia solanivora* in potatoes ✓ IPM in potatoes ✓ Rations for broiler chickens ✓ IPM in hot chili peppers ✓ Control of the cassava stemborer ✓ Control of *Tecia solanivora* in potato seed ✓ Control of a fungus causing stem necrosis in blackberry ✓ Control of root rot in peas ✓ Chemical control of the stemborer in peas ✓ Improved vs farmers' seed in potatoes ✓ Improved seed for green beans

Preliminary results were as follows:

- With the results obtained thus far, CORPOICA has been able to obtain resources, thereby providing continuity to the CIAL project. Donors such as SENA (Servicio Nacional de Aprendizaje) and PRONATTA (Programa Nacional deTransferencia de Tecnología Agropecuaria) have financed projects on two occasions.
- They are currently gathering information for publishing a book containing articles with the results of the CIAL researchers.

- At the institutional level, the CIALs have gained recognition although stronger support is requireed to improve the coordination among projects. The participatory methods now form an important part of CORPOICA's conceptual base.
- They have a group of agronomists with experience and knowledge of the methodology that will enable them to correct errors in future projects and have groups with a more solid technical and methodological background.
- They have supported the tendency of many farmer groups to become involved in community development objectives based on their research results, such as projects for microenterprises, marketing and/or small-scale seed production.
- Alliances have been made with some UMATAS (Unidad Municipal de Asistencia Técnica Agropecuaria) for financing events together with the CIALs, as well as for financing some production lots.

The following difficulties were identified:

- Some resistance has been found, especially in the Cundi-Boyacense savanna, with respect to conducting trials in small plots. They would like to begin with large lots from the onset of the research
- CORPOICA requires the agronomists to implement several projects at the same time. Therefore they have not been able to dedicate sufficient time to the farmer groups, to strengthen them methodologically and understand the approximate dimensions of the trial experiments, the purpose of which is to reduce risk when they do not know much about the new technology being tested.
- When there is money involved for fieldwork, the agronomists are attracted by those projects that have the most resources to the detriment of those with fewer resources.
- The experiments have developed slowly because the agronomists do not trust the results, inducing the farmers to repeat the trial in the next cycle.
- There is the technical bias of the agronomist, and insufficient attention is given to the methodological process of strengthening the groups' self-reliance. The groups are not very solid and are therefore susceptible to the institutional problems that affect their backstopping.
- Equal weight is not given to the qualitative and quantitative results because in traditional research, the latter has more valued.
- CRECEDs (Centro Regional de Estudios de Capacitación, Educación y Desarrollo) have been withdrawn from some regions and the trained personal transferred, which has resulted in abandonment of about 40% of the groups that had been formed.
- The personnel have to present short-term results, which impedes the investment of time initially required by the groups for their strengthening.

- The process of selecting communities has not been the best; thus great effort has been made to identify more reliable criteria and improve their commitment to conducting field trials.

Project for sustaining CIALs approved

On August 10, the WK Kellogg Foundation approved a three-year grant for this project, the purpose of which is to promote sustainable rural development by extending the capacity of poor rural communities to solve their agricultural and environmental problems, take advantage of economic opportunities and integrate these within broader community development efforts. The project has eleven proposed outputs, focusing on the consolidation of second-order associations of CIALs:

- Develop and strengthen second-order associations of CIALs
- Validate and document self-financing mechanisms for CIALs and ASOCIALs
- Establish participatory monitoring and evaluation processes for the ASOCIALs
- Systematize and disseminate lessons learned with respect to the processes of organizing second-order associations of CIALs
- Document experiences and lesson learned with respect to national-level organizations replicating the CIAL methodology
- Enhance local capacity for implementing R&D processes at the grassroots level through CIALs and ASOCIALs
- Determine the impact of the ASOCIALs with respect to food security, income generation and decision-making at the grassroots level
- Determine the capacity of the ASOCIALs to stimulate both agricultural innovation and NRM locally
- Expand the CIALs capacity to establish microenterprises

The following action plan was developed as the first major activity of this new project.

Preparation of action plan for the Honduran CIAL network

Researchers: *Carlos Arturo Quirós and José Ignacio Roa*

Collaborators:
Fredy Sierra, José Jiménez and Carlos Amaya[13]

The Local Agricultural Research Committees (CIALs) were introduced in Honduras by the CIAT Hillsides Program in 1993. Initially, two CIALs were formed in the region of Atlántida: Santiago Arriba and El Recreo(Jiménez, 1997[14]). With these two groups, the process of doing research with small farmers was begun, based on the demand from the community and the adaptation of the methodology to the conditions of this country.

Based on the experiences with 5 groups in 1995, the Participatory Research Project in Central America (IPCA), the following needs were identified: involve more interested institutions and have more agronomists trained in the method. Thus a CIAL course for 9 institutions and 17 agronomists was held in the city of San Pedro Sula. All the participating institutions acquired the commitment to implement the methodology and evaluate it after at least two planting cycles had been carried out in the respective communities where the CIALs had been formed.

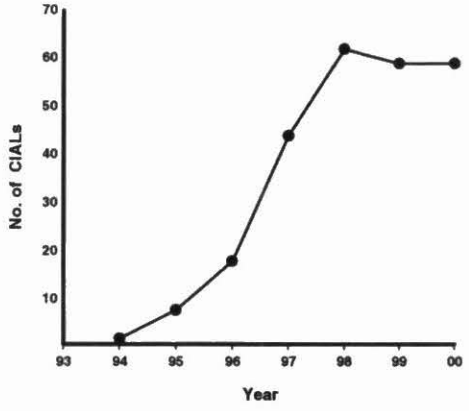

Figure 1. Number of CIALs reported by the participating institutions in the project for disseminating the CIAL methodology in Honduras from 1994-2000.

[13] IPCA and SCD

[14] Jimenez, J. 1997. La methodología CIAL: Caso El Recreo municipio La Masica, Departamento de Atlántida. Investigación Participativa de Agricultores para la Agricultura sustentable en laderas. La Ceiba Atlántida. Doc. de Trabajo No. 0011769-02. 24 pp.

With the training and follow-up received from the IPRA Project and with the impetus from the participating institutions, the number of CIALs and the strengthening of the methodology in the country became more important (Fig.1).

Today 51 groups have been formed by five institutions. The Committees have been meeting yearly since 1997 in order to share the results obtained in the so-called "National Encounter of CIALs" (Memorias 97, 98, 99[15]). At these events, it is the farmers themselves who—in their own words and with visual aids prepared by them with the help of the agronomist facilitator, present the results and conclusions obtained in their research to their fellow farmer-researchers. At these events two members per Committee and representatives of the sponsoring institutions participate in the process directly or indirectly.

These experiences have been important. Some CIALs have consolidated as a group and make recommendations to other members of the community. Others with more experience have established small agroenterprises that permit them to give added value to the products derived from the research process.

Given the degree of progress reaching during these years and taking into account the experience of CORFOCIAL, the Corporation for Promoting CIALs in Cauca, Colombia, their coordinator, Alfonso Truque, was invited to the III National Encounter of CIALs in Honduras, held in Siguatepeque. He told the Honduran farmers about the Corporation's experience in Colombia and suggested the possibility of creating an organization that would meet the needs of the CIALs in Honduras.

After several meetings and internal discussions on the topic, they decided to create Regional Associations, which they initially called the National CIAL Network (Fig. 2).

Given the foregoing, the group of agronomists who are in charge of the CIAL methodology, TecniCIAL, was asked to help them develop an action plan that would serve as a guide or map for their future actions.

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[15] IPCA. 1998. In: Segundo Encuentro Nacional de los Comites de Investigación Agrícola Local (CIAL) de Honduras. Memoria. "Damos lo que hemos hecho y recibimos de otros CIALs lo que nos hace falta conocer". Lago Yojoa, Santa Bárbara, 1-3 April. 56 pp.

Primer Encuentro de los Comités de Investigación Agrícola Local (CIAL) de Honduras. 1997. Memorias. Ser investigador es difícil, es querer saber lo que no sabe y querer buscar lo que no se ha perdido. No todos tenemos la misma forma de trabajo, pero sí llevamos el mismo camino". Lago de Yojoa, Santa Bárbara, Honduras. 20-21April. 14 pp.

IPCA, CIAT. 1999. In: III Encuentro regional de CIALes Honduras y Nicaragua. Memoria: "Por la formación de la red Nacional de CIALs". Centro San Francisco, Siguatepeque, Honduras 9-10 Dec. 78 pp.

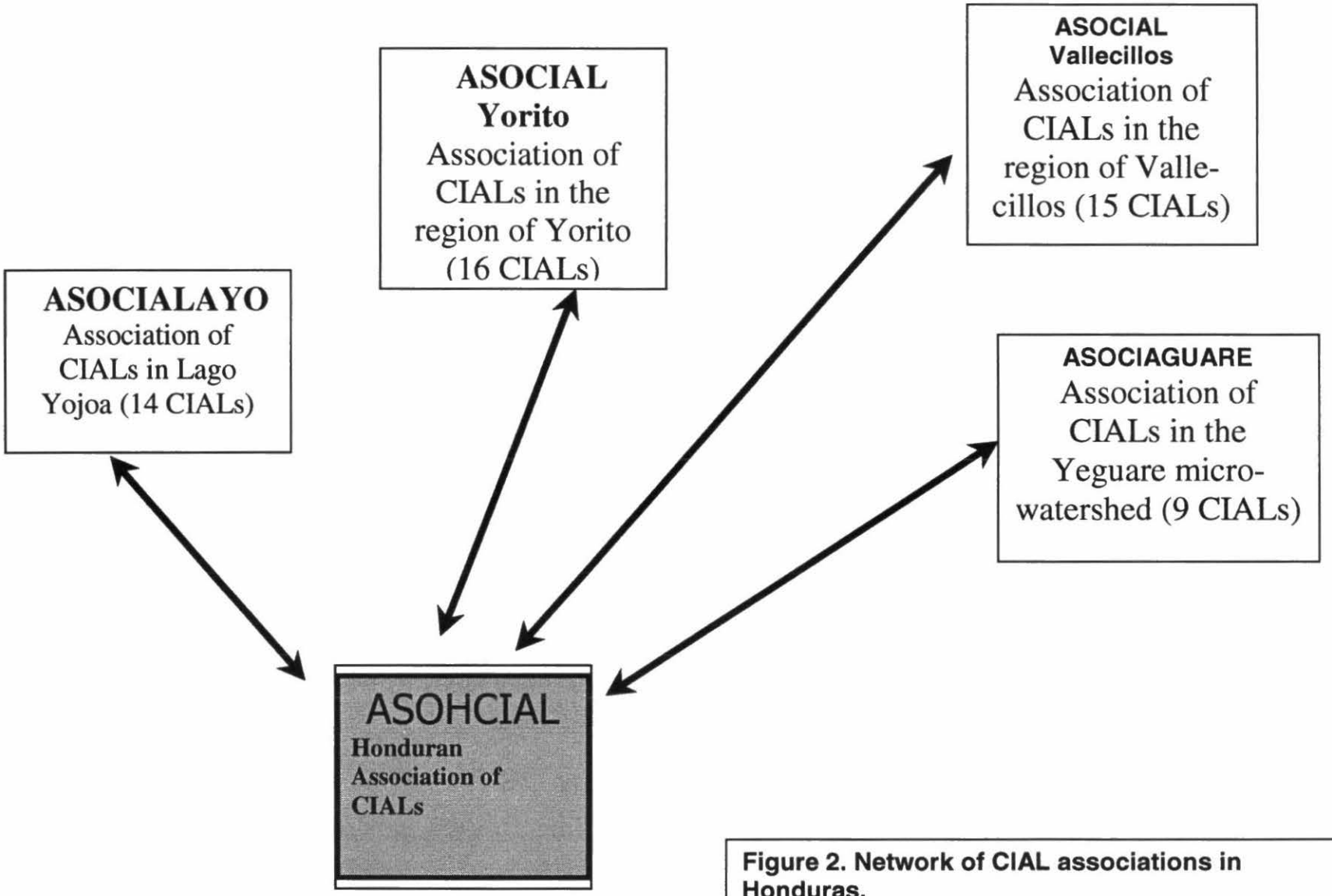


Figure 2. Network of CIAL associations in Honduras.

The general objective was to develop an action plan that permits the Board of ASOHCIAL to chart the route to follow for consolidating the second-order association of CIALs in Honduras by means of a participatory process. The specific objectives were as follows:

- Permit all the representatives of the four regional associations to contribute their ideas
- Gather information on the different types of associations, their advantages and disadvantages
- Identify the objectives desired for the organization
- Identify actions for fulfilling said objectives
- Propose possible verifiable indicators

Methodology. The procedure used was based on some steps of the methodological proposal for the participatory component of a municipal land ordinance developed by Beaulieu et al (2000)[16], with certain adaptations that made it possible to apply with respect to the objectives proposed in this study.

Four working groups were established, one for each of the ASOCIAL participants. The moderators were the agronomists who backstop the CIAL in that region.

The sequence of activities was as follows:

- *General description of the desired conditions*. In a brainstorming session the participants were asked to imagine that within three years (the time when the Kellogg project ends), how they would like to see their organization, assuming that all the conditions had been favorable; in other words "how did they see the organization of their dreams in 3 years". The participants were asked to begin their sentences with the words "I see" "I wish." Emphasis was placed on the vision of what they wanted rather than on possible problems. The moderator made note of the participants' comments in their own words and verified their understanding of the same. The moderator did not seek an explanation of why the farmers wanted something so as not to bias the opinion of the other participants or inhibit their comments.

  In the description of the "dream," they were told that they could also refer to conditions with which they feel satisfied today or that they have accomplished and about which they feel good.

[16] Beaulieu, N.; Jaramillo, J.; Leclerc, G. 2000. Propuesta metodológica para el componente participativo del ordenamiento territorial municipal, basada en el desarrollo de una visión común. Documento de trabajo. Versión preliminar. Centro Internacional de Agriculltura Tropical, CIAT, Cali, Colombia. 15 pp.

To the extent possible during this exercise and others, the moderator or facilitator grouped or classified the farmers' comments into more general topics.

- *Prioritization of the general topics and their items*. Each group was given the opportunity to mention their four most important general topics for reaching their dreams/wishes. The votes were tabulated, and the priorities, established.

- *Presentation of results*. Each group named a rapporteur from among the farmers, and the results obtained were presented in a plenary session.

- *Where are we, what have we accomplished today*. Although the organization has just begun, an inventory was made of their principal accomplishments or progress related to their organization to date.

- *Who will be responsible for what has been visualized in the organization of the future?* Using the vision desired for the organization, the different items identified in relation to the competency of the ASOHCIAL or the ASOCIAL were analyzed in the assembly.

- It was decided to continue working only with the items related to ASOHCIAL given that each ASOCIAL will do their respective analysis later, using this same methodology.

- After the brainstorming, the moderators oriented the discussion around the broad topics that were not mentioned and that have been important for the organization of the CIALs in CORFOCIAL-Colombia (see Box 1).

- *Preparation of objectives*. Given that the objectives were for the national organization, the members of each ASOCIAL were divided into four groups. Based on the results of the prioritization of the broader topics, topics were paired—one of higher prioritization with one of lower prioritization. Then the topics were assigned at random to the groups of farmers to carry out the work.

- For each topic, a specific objective was prepared to cover what the group of farmers hoped to achieve.

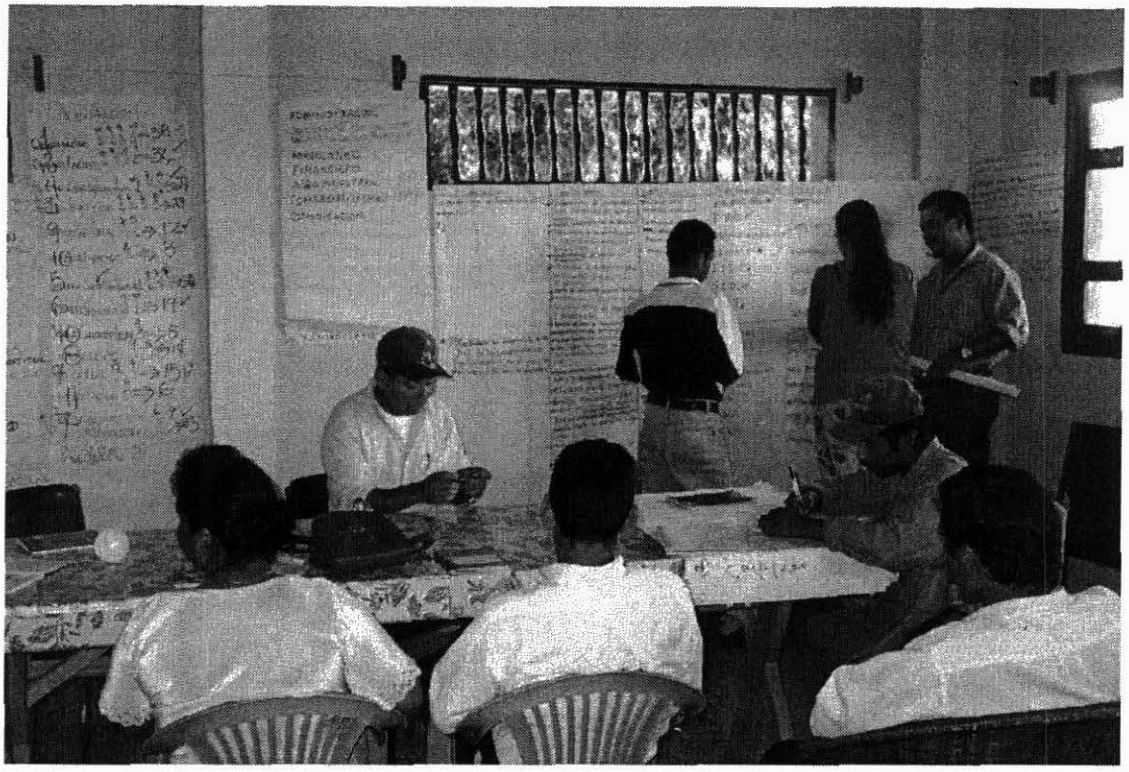


Photo 4. Members of the National CIAL Network, ASOHCIAL and agronomists from TecniCIAL, who work with the CIAL methodology in the discussion and planning of future activities.

BOX 1. POSSIBLE TOPICS TO BE ADDRESSED

➢ *Administrative*

- ✓ Provision of technical backstopping to the CIAL
- ✓ Establishment and maintenance of the database (gathering of results)
- ✓ Submission of periodic technical and financial reports to the Board

➢ *Training*

- ✓ Dissemination of the CIAL methodology
- ✓ Training of some CIALs in the preparation of projects for obtaining resources at the local level (municipal)

➢ *Financial*

- ✓ Provision of resources for sustaining the organization

- ✓ Financing of agronomists
- ✓ Financing of seed capital for the CIALs
- ✓ Rotating fund for machinery and production projects

➤ *Institutional strengthening*

- ✓ Writing projects for obtaining funds at the national or international level for CIAL operations
- ✓ Training of their members

➤ *Linkages and contacts with other organizations*

- ✓ Visits to government entities and NGOs to seek support in the form of scientific backstopping, logistical support in the case of CIAL meetings, or collaboration with agricultural products for supporting the CIAL (establish linkages that strengthen the organization)
- ✓ Serve as a source of information (telecenters, other institutions). Support to organizations and entities that are working in the communities based on information and experience that these communities already have.
- ✓ Participation in technical events and/or related to their specific interests
- ✓ Mediator of conflicts
- ✓ Consecution of the technological supply in the NARS and/or others
- ✓ Feedback to the NARS and/or other on results of technology trials

➤ *Research*

- ✓ Support the students who are doing their thesis research in the communities
- ✓ Disseminate and share results (encounters)
- ✓ Ensure the correct application of PR in the CIAL

➤ *Marketing*

- ✓ Identification of possibilities on local or external markets

➤ *Agroindustry*

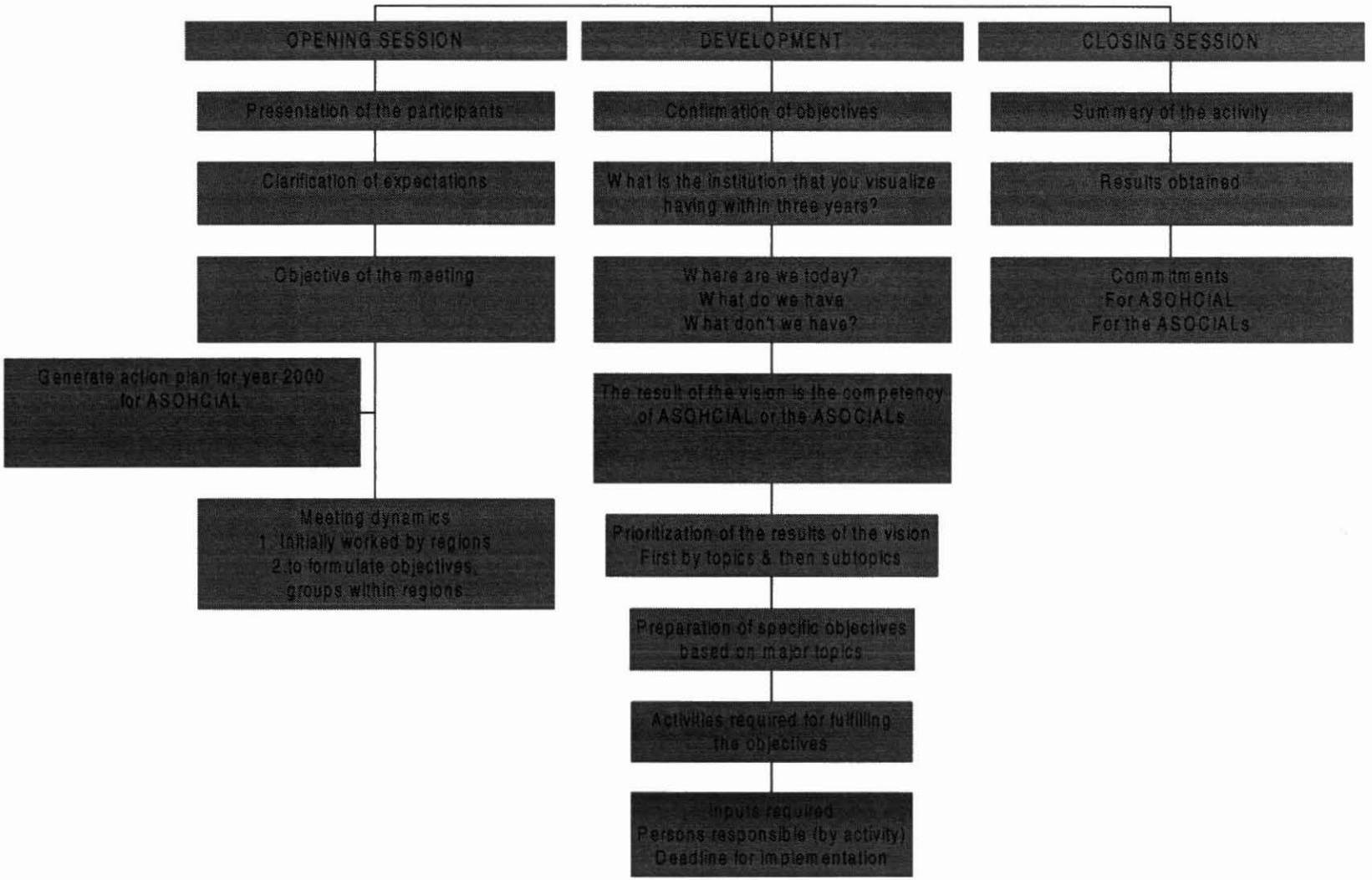
- ✓ Motivate the creation of small agroenterprises as the product or as promoters of
- ✓ echnology generation (based on the experience of CORFOCIAL in Colombia)

- *Activities by objective*. For each specific objective, the required activities required to accomplish it were specified. This was done by asking the question: "Well, now what should we do to achieve the objective that you have just described?"

- *Time limit for their achievement*. The need to establish time limits by which time the activity should have been terminated is important for commitment and to facilitate their follow-up.

- *Confirmation of outputs (indicators)*. The producers were asked to think about what would be the best way of confirming that each activity has been accomplished as planned.

FLOWCHART
Action Plan ASOHCIAL-Honduras



▶ Results

General description of the conditions desired. Based on the foregoing methodology and with the aid of the flowchart, the information in Table 6 was generated on the dream the participants had with respect to their organization.

Table 6. Description of the conditions desired in their organization.

ORGANIZATION	RESOURCES AND LOGISTICS	ADMINISTRATIVE FUNCTIONING
✓ A legally constituted organization, recognized both nationally and internationally with a well-defined register of the CIAL members. ✓ ASOHCIAL-ASOCIAL communication should be reciprocal and oriented towards a common goal. ✓ All members should work with love for their organization, and everyone should be responsible in carrying out their functions. ✓ The Board should be well organized. ✓ More ASOCIAL regional associations should be affiliated to the ASOHCIAL ✓ There should be more participation of women. ✓ There should be a follow-up system at the national level.	✓ Should have its own technical staff. ✓ Should have their own means of transportation for mobilizing the agronomists, members and producers ✓ Headquarters should have a capacity for holding meetings ✓ Should have equipment for facilitating the regional associations' work with CIALs: machinery for microenterprises or other necessary equipment ✓ Have the necessary resources to conduct research ✓ Office equipped with computer in order to have access to information on the CIAL results ✓ Should have a display area for showing their products	✓ Access to emergency (e.g., droughts) funds for their members ✓ Have funds at low interest rates for supporting production projects and strengthening the CIALs ✓ Funds/scholarships for students and/or CIAL members ✓ Capacity for presenting proposals and implementing them at both national and international levels ✓ Credit for the regional association of CIALs ✓ Organization that supports ASOCIAL projects
STRENGTHENING INSTITUTIONS	**SOCIAL AND INSTITUTIONAL PROJECTIONS**	**TRAINING**
✓ Capacity for preparing and presenting proposals to ensure sustainability ✓ Should have sufficient economic resources	✓ The ASOHCIAL should be a model of community organization ✓ The ASOHCIAL should promote integrated regional development	✓ More training in organizational skills ✓ Train one staff member of the ASOCIAL in project administration ✓ Services for formation of family

✓ Members of the ASOHCIAL should know their duties and rights ✓ Should have sufficient knowledge of administrative aspects ✓ Should have capacity for self-reliance	✓ Should be an organization with a social purpose, providing more opportunities for people to improve their quality of life ✓ The research results obtained should be disseminated to increase the productivity of the associates ✓ A organization that shows solidarity with all the ASOCIALs	members (student scholarships) ✓ Formation as agronomists (farmer/community leaders) in PR methods and techniques ✓ Training in conducting experiments
MARKETING	**AGROINDUSTRY**	**COMMUNICATIONS**
✓ Seek channels for commercializing the products that the ASOCIALs produce ✓ Promote the participation of the ASOCIAL in the farmers' fairs, agricultural & livestock markets ✓ Identify at both national and international levels the contacts for exporting its products (e.g., coffee, watermelon) ✓ Have a storage system ✓ Seek way to advertise the products	✓ Should have the mechanisms and contacts for promoting agroindustry ✓ Give added value to the products: artisanal seed production and organic coffee for export	✓ Members of the network should be like sisters ✓ Dissemination by radio and "La hora CIAL en Honduras" on Radio America ✓ Systematize the experiences and exchange information, encounters, study tours and workshops ✓ Dissemination via radio programs and ASONACIAL newspaper ✓ Document experiences

Prioritization of the general topics. The following scale (1=10, 2=9, 3=8, 4=7, 5=6, 6

=5, 7=4, 8=3, 9=2) was used to make a general prioritization by topics, by position occupied (Table 7)

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Table 7. Prioritization of the general topics by representatives.

Topic	1st	2nd	3rd	4th	5th	6th	7th	Total	Prioritization
Resources and logistics	2	1	0	1	0	1		41	1st
Organization	2	2						38	2nd
Training	2	1		1				36	3rd
Social projection		1		1			1	20	4th
Administration	1	1						19	5th
Marketing			1	1				15	6th
Institutional strengthening		1			1			15	6th
Agroindustry				1		1		12	8t
Communications					1			6	9th

Preparation of objectives, activities and indicators. The following is an example of the output that was accomplished with the active participation of the members of the ASOCIAL in the preparation of objectives, activities, responsibility and indicators (Table 8).

Table 8. Objectives with their respective activities and inputs required for ASOHCIAL's action plan.

Objectives	Activities	Necessary Inputs	Responsible	Deadline	Verifiable Indicators
1. **Organization**: Have a legally constituted organization	✓ Obtain legal status	✓ Economic resources ✓ Hiring services of a lawyer	✓ Lawyer	✓ Feb./2001	✓ Legal status obtained
	✓ Contract person qualified to carry out necessary transactions	✓ Economic resources ✓ Recommendation of the lawyer about organization kind ✓ Inform him of what needs to be accomplished	✓ Entities providing support	✓ Aug./2000	✓ Lawyer contracted
	✓ Prepare bylaws	✓ Contract lawyer ✓ Meetings with the ASOCIALs to learn how they want ASOHCIAL to function	✓ Assembly ✓ Lawyer	✓ Dec./2000	✓ Bylaws prepared and applied
	✓ To elect Board of Directors	✓ Assembly meeting ✓ Election of the Board	✓ Assembly	✓ Oct./2000	✓ Board named and functioning
2. **Training**: Achieve technical operational capacity of the ASOHCIAL through the active participation with their regional associations	✓ Evaluate level of knowledge of the Board members of ASOHCIAL (self-reliance, administration, organization, research)	✓ Human ✓ Economic	✓ TecniCIAL ✓ ASOHCIAL	✓ Dec./2000	✓ Report of the evaluation results ✓ Report distributed to regional associations, CIAT, and other entities ✓ Document on training needs, prepared

Objectives	Activities	Necessary Inputs	Responsible	Deadline	Verifiable Indicators
	✓ Strengthen their knowledge of the CIAL methodology	✓ Didactic: handbooks, videos	✓ TecniCIAL ✓ ASOHCIAL	✓ May/2003	✓ ASOHCIAL Board members show mastery of the CIAL methodology
	✓ Draw up norms, regulations and functions of the Board	✓ Secretary, computer, printer ✓ Paper	✓ ASOHCIAL ✓ TecniCIAL ✓ CORFOCIAL ✓ Lawyer	✓ Dec./2000	✓ Bylaws, regulations, norms and functions prepared and distributed
	✓ Training in how to prepare project proposals	✓ Human resources ✓ Diagnoses ✓ Maps ✓ Formats	✓ ASOHCIAL ✓ TecniCIAL ✓ Outside consultant	✓ June2003	✓ Proposals prepared
	✓ Training in project management	✓ Local human resources ✓ External human resources ✓ Economic resources ✓ Logistics	✓ ASOCIAL ✓ TecniCIAL ✓ External advisor	✓ Dec./2001	✓ Book of acts ✓ Administrative control system in place

Conclusions

- Although there is a disparity in the degree of knowledge of the farmers in the enterprise that is being initiated, there is strong interest in establishing the third-order or centralized organization of the CIALs; that is, ASOHCIAL.
- The CIALs from each of the four regions are willing to form their ASOCIAL and their national network, which will be called ASOHCIAL.
- The institutions that facilitate the CIALs are offering continuous support to the organization of the ASOHCIAL.
- The principal lines of action that serve as a guide for the formation and strengthening of their organization were identified.
- The Board of Directors needs to establish its norms, functions and bylaws for its internal functioning.
- Once the organization has been formed, the Board members should be trained in administrative and financial aspects, as well as in the preparation of proposals.
- It is necessary to identify mechanisms for financing in order for both ASOCIAL and the CIALs to become sustainable, thereby permitting continuity in the proposed goals.
- The research topics and the management of natural resources were not discussed in depth as these are topics related directly with the CIALs, which are the implementers.

Community telecenters: A strategy for promoting sustainable development (InforCauc@)

Researcher: *Luis Alfredo Hernández R*
Collaborators:
Olga Patricia Paz[17],Nathan Russell[18], Eduardo Figueroa[19], Alvaro del Campo[20], and Grassroots Group in Cauca

Project goal. The purpose of the InforCauca Project is development communications, where appropriate models are tested for strengthening the local capacity to obtain and use information of different types, especially that related to the economy and the sustainable management of natural resources.

Challenges. The project proposes to install three telecenters that will enable the communities to use, exchange and produce information. In addition to setting up the infrastructure, joint activities are being conducted in order to determine how the telecenters can link up to the demands of the community, how they can improve the performance of the community organizations and what the impact of

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[18] Head, CIAT Communications Unit
[19] Assistant, CIAT Communications Unit
[20] Vice-Rector, CUAO

the new technologies will be. InforCauca has at least six basic levels: convocation, setting up of the telecenter, training, operations, research and evaluation.

From the onset, CIAT established contacts with the Corporación Universidad Autónoma de Occidente (CUAO) in Cali, known for promoting access to the new technologies. The two entities invited various community organizations to apply for the position of operators of the telecenters. Of 11 applicants, 7 joined to form a support group that will permit them to operate a telecenter in central Cauca; and from the remaining organizations, two were selected: one from Cali and the other from northern Cauca. The urban organization is a training center located in a marginal area of Cali, known as the District of Aguablanca, which has more than 450 thousand inhabitants, the majority of whom have migrated from the Pacific Coast and rural areas of nearby provinces.

An Association of Paez Indian Councils is in charge of operating the telecenter in northern Cauca. This organization brings together 14 councils. In the zone covered by the Reservation, 65% of the population is Paez Indians; 35% are mestizos (30%) and 5%, Afro-Colombians. It is in charge of managing and developing productive and social projects that favor its communities. The Support Group that operates the telecenter in central Cauca is formed by seven organizations, the majority of which conduct research and provide technical backstopping to agricultural and livestock activities and to rural microenterprises. In this way institutional linkages were established, bringing together the experience of different organizations committed to the social development of both urban and rural communities.

Setting up the Telecenters. This phase included the selection and adaptation of the sites for the telecenters, the acquisition and installation of the technological platform and the selection of the purveyors of Internet.

Parallel to this process, the operators of each telecenter (called local coordinators) were selected: 6 half time (2 per telecenter), of which 4 are women and 2 are men, ranging in age from 20-40 years. The most important thing is that these people belong to the communities where the telecenters are located and are thus committed to them, understand the internal dynamics of the community organizations and, above all, have a lot of enthusiasm and confidence in the project.

Training. One of the components that links InforCauca is the training. It is present throughout the process as a need to strengthen the skills of the local coordinators and of the members of the community organizations, so that they in turn can become multipliers for other members of the community.

The training consists of several levels. The initial induction describes the telecenters, the world movement of telecenters, and the objectives of the

InforCauca Project. Technical training is provided in management of the software, and some training is oriented towards strengthening communication skills, offering tools for improving the performance of the telecenter and proposing alternatives in project management and negotiation.

This training is for the local coordinators, with the support of the other members of the organization and of the project coordination. The purpose is to strengthen their capacity to design strategies that guarantee the sustainability of the telecenter, generate its own projects and its own resources with the purpose of developing and expanding the current technological platform, which consists of two interconnected computers, a printer and a scanner.

Telecenter activities. At this time, an action plan is being designed for each telecenter, which means establishing schedules, services to be extended, costs of the same and user policies. Each organization is preparing its own plan given that each telecenter operates under different organizations and environments so that their actions do not have to be the same. Nevertheless, parallel to the activities specific to each telecenter, InforCauca plans to build projects on line to exchange products and services. Considering that two of the telecenters offer their services to rural communities dedicated to the production of food, the initial focus will be on a network for marketing products with the purpose of facilitating and promoting direct contacts and negotiations between the producers and the distributors and end-users in urban areas. This will make it possible for the producers to market their products directly, obtaining better profits and learning of possible demands on the market. It is also expected to improve the food supply for the residents of marginal sectors in Cali. Basic production projects were defined to start the marketing network. Afterwards studies will be conducted to determine the commercial viability of these products according to their amounts, characteristics and production methods.

The participating institutions—CUAO and CIAT—will develop other lines of action related to technology transfer, training in different fields including environmental and natural resource management, promotion of their business capacity, negotiation and technical assistance for the projects.

The project 's Web page is being designed with links to the telecenters, to the community organizations and to each institution's programs. One of the objectives of the Web site is to market products and services, as well as exchange experiences, techniques, agricultural knowledge, etc. This page will make it possible for the organizations to make available on-line information about the projects that they are carrying out, thereby facilitating possible meetings and strategic alliances.

Lines of research. Initially, the opportunities and risks associated with the implementation of new communication and information technologies in the communities were determined.

- Research will be initiated to design communication strategies for the community organizations that are members of InforCauca. The idea is to diagnose their processes of internal communication and formulate a communication plan, the strategies of which make it possible to identify the stakeholders and the linkages among the different organizations and their work with the communities. The proposed methodology is participatory research so that the members of the organizations can be active participants in the design of the strategy based on the needs of their institutions and of the telecenters. Joint meetings are being prepared to define the steps to follow, the lines of work and the tools to initiate the process.

- It has been important to learn about the activities and projects carried out by each community organization and some of their information and communication needs. This will make it possible to identify the way the telecenter can contribute to satisfying these demands. In addition, it has provided the information necessary for determining the project's base for initiating the network among producers and consumers.

- A basic component consists in monitoring the project, evaluating it and measuring the impact of the telecenters over a three-year period. For this purpose a proposal was developed, which includes the participation of the local coordinators and the members of the organizations. Additional resources are being sought to conduct a rigorous impact evaluation, the results of which can be shared with other projects.

Lessons learned. InforCauca is a project in which 11 organizations are participating. The initial process of approaching them served to generate confidence and construct a solid institutional base. InforCauca and the organizations are fully committed and willing to support each other, establishing the bases for ongoing communication—aspects that are key for transmitting their action plans jointly. The organizations that form part of InforCauca all work towards community development, but in different fields. The members of the community organization located in the urban area of Cali have established set periods for complying goals, which are generally fulfilled; while the rhythms tend to be slower for the members of the Indian organization. This has taught us to be aware of the different dynamics of each organization and to take them into account before planning activities or designing tasks.

The Organizing Committee consists of representatives from the Association of Indian Councils, the training center in Aguablanca, the interinstitutional consortion from the Central Cauca zone, CIAT and the Universidad Autonoma de Occidente, the general coordinator of the InforCauca Project, and the coordinator of the Telecenters. This structure has enabled the different actors to feel a part of and committed to the project. Its purpose is to develop an integrated strategy for establishing the Telecenters and to ensure that the stakeholders have the opportunity to express their concerns. Although they are in charge of operating

the telecenters, everyone is thinking about how this can best be done. In the case of the Indian organization, some of their members do not trust the new technologies, perceiving them as a threat, making it possible for persons from outside to usurp, for their own benefit, information that belongs to the Indian communities. Consequently, some of them have rejected the project. These situations have been dealt with in conjunction with the leaders of their organization as they trust fully in the project and in the potential benefits of the telecenter. These fears imply, nonetheless, an important issue to bear in mind throughout the project—especially in the evaluation of impact: the effects, both positive and negative, that the technology can have on the communities.

Based on the training carried out thus far, we have derived the following lessons:

- The learning rhythms and modes are different in each case.
- The most important aspect of the training is that is a space where the participants get to know each other, exchange ideas, share likes and fears with respect to the new technologies, and begin to plan possible collaborative alliances among the organizations they represent.
- It has also been meaningful to keep informed of other processes, learn about experiences and put into practice the lessons learned from others. This is particularly true because we are part of a relatively new movement and because there are still many reservations about having access to the new technology.

Community organizations network

Researcher, *Olaf Westermann*[21]

- *Objectives*
  - To strengthen community organizations in order to develop their abilities and capacities for interaction with external agents and decision-making
  - To develop representative local structures in order to improve the communication of local needs to external support agents and the bargaining power of local actors
  - To increase the bargaining capacities of community organizations to negotiate with external agents

[21] Hillsides Project, PE-3.

Table 9. Logframe for project activities.

Intermediate Outcome	*Indicators*	*Means of Verification*
1. Community organizations identified and/or formed, providing a forum for analysis and negotiation of diverse interests	✓ Identification of community organizations	✓ Community Profile (SCAT)
2. Awareness of the existence and purpose of other groups recognizing diversified interests, increased	✓ Community organization relationships ✓ Community organization networks and organizational density	✓ Community Profile (SCAT)
3. New and existing community groups strengthened with improved leadership and shared responsibilities, norms and rules, conflict resolution capacity, improved management and decision-making abilities, gender equity, capable of project proposal design and resource mobilization	✓ Membership ✓ Services provided by the network ✓ % services provided by the network that reach the target population ✓ Institutional capacity (leadership, participation, organizational culture, organizational capacity)	✓ Community organizations profiles (adapted from institutional profiles of SCAT), applied to leaders, members and nonmembers.
4. Network of community associations established with clear operational rules, norms and principles (internal links established)	✓ No. of members of the network that live in the community	✓ Community organization profiles (adapted from institutional profiles of SCAT), applied to leaders, members and nonmembers. ✓ Analysis of linkages

OUTPUT 3: PROFESSIONALS AND OTHERS TRAINED AS FACILITATORS OF THE PARTICIPATORY RESEARCH APPROACH

MILESTONES

* Professionals trained in the use of tools and methods for FPR
* Professionals trained in CIAL methodology
* Professionals trained in use of the preference-ranking matrix
* Organization of agronomists working with CIALs in Honduras
* Follow-up of trainers who were prepared in Training of Facilitators course

International workshop on small farmers' methodologies of experimentation; meeting to exchange experiences on the institutionalization of participatory research methodologies

Researchers: *Carlos Arturo Quirós and José Ignacio Roa*

This event was held at the School of Veterinary Medicine and Animal Science (FMVZ) of the Universidad Autónoma of Yucatán (UADY) and supported by members of the DIP (Diagnóstico, Investigation and Participation) project. This group promotes action research oriented towards endogenous change in rural communities. The training activities were held from 27 Sept.-8 Oct. with the participation of 32 participants from 15 institutions and 4 countries.

The objectives of the course were to:

- Provide training in the CIAL methodology
- Reflect on the potential of the CIAL methodology in their respective projects
- Share different strategies for doing PR
- Visit a small farmer experimentation project in Yucatan
- Discuss possible adaptations of the methodology for use in the area of animal production

Highlights of the results obtained are as follows:

- The advantages and disadvantages of the CIAL methodology were discussed, placing emphasis on its application in small animals. There was also an opportunity to exchange experiences in the use of other methodologies. The following points of reflection resulted:
  - It is necessary to form and train agronomists in PR methods starting in their undergraduate studies.
  - Follow-up is an essential component for establishing dynamic and interactive participatory processes.
  - The systematization of the processes and results from the field are essential for disseminating them both within the institution and interinstitutionally.

- There is a need to evaluate the impact of applying FPR methods in order to measure their importance, as well as to integrate evaluation criteria.
- The need to expand the social role of the organization
- The lack of adequate statistical tools
- Relation between product and result of the small farmer experimentation and conventional research.

- The most relevant aspects for applying the PR methodology in research on animals were analyzed with respect to:
  - General
  - Diagnosis
  - Experimentation phase
  - Evaluation of technologies
  - Dissemination

Professionals trained in the use of tools and methods for FPR

Researchers: *Luis Alfredo Hernández, Carlos Arturo Quirós and José Ignacio Roa*

Collaborators
Maria Elena Morros and Angela Bolivar[1]

Table 1 summarizes the training events related to FPR, the participating institutions, the number of participants and country.

Table 1. Participation in training events on FPR.

Date	City/Country	Event	Participating Institutions	No. of Participants
Sept. 27-Nov. 1, 1999	Mérida, Mexico	IPRA/CIAT Methodological Proposals for Small Farmer Experimentation	✓ DISE-FMVZ-UADY: - Rector's Office - Dept. of Beekeeping - Dept. Animal Breeding - Dept. of Ecology ✓ Instituto Técnológico Agropecuario ✓ Desarrollo Integral Agrícola ✓ FONAES ✓ ICRAF ✓ IEPA A.C./MAC ✓ WEY College, London Univ. ✓ Reading Univ., England ✓ DECOTUX ✓ NRG-CIMMYT ✓ PROTROPICO ✓ Maderas del Pueblo ✓ CIRAD/CIMMYT ✓ Sociedad de Solidaridad Social	32

[1] Researchers, Fondo Nacional de Investigaciones Agropecuarias (FONAIAP), Venezuela.

Date	City/Country	Event	Participating Institutions	No. of Participants
Nov. 8-19, 1999	Barquisimeto, Venezuela	III International Course on PR	✓ Convenio CIARA – BM, Empresa APROA, C.A. ✓ Convenio CIARA – BM, Empresa RENTAGRO, CA ✓ TECNOSERVI, CA ✓ CIAE – Lara ✓ CIAE – Yaracuy ✓ CIAE – Guarico ✓ CIAE – Tachira ✓ FONAIAP – Trujillo ✓ FONAIAP – Mérida ✓ FONAIAP – Sucre ✓ FONAIAP – Apure ✓ FONAIAP – CENIAP ✓ CIARA – Yaracuy ✓ CIARA – Rojas ✓ CIARA – Mérida ✓ CIARA – Aragua ✓ SERVIOCAF, CA ✓ ESSINIFOR, CA	33
Feb.14-18, 2000	Maracay, Venezuela	CIAL course, Aragua Region	✓ Instituto de Investigaciones Agronómicas: - Dept. of Plant Protection - Dept. of Plant Genetic Resources - Dept. of Fruits ✓ Instituto de Investigaciones en Recursos Agro-ecológicos - Dept. of Agroeconomics - Dept. of Soils ✓ CIAE-Trujillo ✓ CIAE-Lara ✓ Extension agents	34
Feb. 7-11	CIAT, Cali, Colombia	Participatory Methods and Techniques for FPR	✓ CORPOICA R-5 ✓ FIDAR ✓ UMATA-Restrepo ✓ Corporación Ecológica Reverdecer ✓ SERTEDESO ✓ PRODESSA ✓ DICTA ✓ CIAT/Nicaragua ✓ CIAT/Costa Rica ✓ CIAT/Villavicencio ✓ CIAT/Cali	12
May 31 June 2, 2000	Sasaima, Colombia	Participatory Methods and Techniques for FPR	✓ NOVARTIS de Colombia SA	21
TOTALS	**5**		**59**	**132**

Training course in Venezuela

Researcher: *Luis Alfredo Hernández*

CENIAP (Centro Nacional of Investigaciones Agropecuarias), an experimental center located in Maracay; is under FONAIAP. They carry out agricultural research related to agroeconomics, plant protection, soils, etc.

- ***Training objectives***. The training course in Venezuela took place from 14-18 February. There were 33 participants in the course, the purpose of which was to train CENIAP-FONAIAP researchers and extension agents, as well as farmers, in the following steps of the CIAL research ladder: (a) Planning the trial (what, where, how, when); (b) evaluation (open, absolute and preference ranking); and (c) analysis of the information (logit analysis).

- ***Synthesis of results***. CENIAP has begun a process of becoming self-sufficient in training, based on the information contained in the CIAL handbooks, which were compiled as a learning unit. It was observed that they were capable of training in the stages such as Motivation, Election of the Committee, Diagnosis and Planning. In the other stages of the research ladder, they have available possibilities such as preference ranking, principal components, logit analysis, etc., which were proposed and analyzed by experts (statistical analysis), in search of their adaptation and later application based on their needs.

  The management of the information, its systematization, analysis and feedback into the different research processes are key to these learning processes, considering that all the actors participate in the technological development.

  A strategy for following up on the process is required in order to learn more about the successes and failures of the diffusion of the methodology in the different contexts of Latin America.

Course on methods and techniques of farmer participatory research (FPR)

Researchers: *Carlos Arturo Quirós and José Ignacio Roa*

This course was held in Sasaima, Cundinamarca with the participation of 21 agronomists from the different regional offices of NOVARTIS in Colombia. This multinational has, for several years, been exploring the possibility of involving farmers in their research plots.

The overall objective was to apply methods and techniques of FPR to improve efficiency of their agricultural projects. The specific objectives were to:

- Identify production problems from the standpoint of the producers
- Identify and interpret the local knowledge
- Involve the farmers in the design of technology trials
- Involve the producers in the evaluation of technology being tested
- Incorporate the feedback from the farmers into the generation of new technology
- Give feedback to the community on the results of the trials.

Results

- It was possible to establish the differences between the traditional methods of on-farm research and the participatory processes in which the farmer participates in the decision-making
- The negative impact that paternalistic practices have on the communities was made clear. They learned that it is better to teach them how to fish than to give them fish.
- When the farmers participate in the research process, they feel that the project
- is theirs and they are capable of disseminating the technology rapidly.

In-service training in use of the preference-ranking matrix

Researcher: *Luis Alfredo Hernández*

- ***Actors.*** Agronomists and scientists have been trained to use the matrix in Venezuela (33), Honduras (3) and CIAT HQ-Agroenterprises (2), breeding and pathology programs (6).

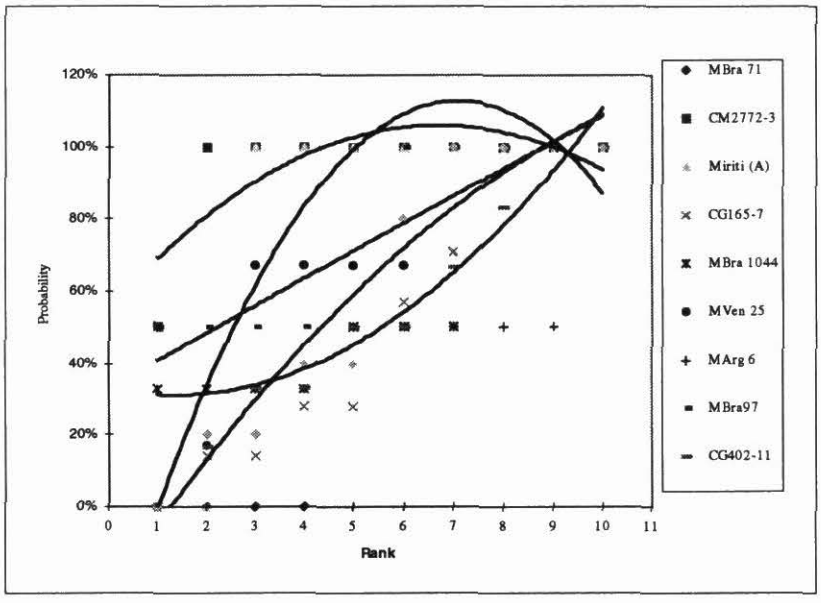
- ***Procedure.*** Teach the philosophy of logit analysis and how the information is processed so that the user can construct and interpret the technology-acceptance graphs.

- ***Accomplishments.*** The tool is being applied in the selection of cassava varieties in the Pathology Program. As a result of this, the project "Evaluation of the adaptation of cassava varieties with resistance to *Phytophthora* spp. through participatory research in Indian communities of Mitú (Vaupés Province, SE Colombia) has obtained the following information.

  Cassava is a staple in the indigenous diet in the Amazon basin, and the marketing of its byproducts provides a source of income. Because of land pressure around Mitú, shifting cultivation with rotations is no longer

practiced, which had permitted forest regeneration, and plots are not adequately selected. One consequence is an increased incidence of cassava pests and diseases. Root rots, caused by several *Phytophthora* species, comprise a major production constraint in the region. A survey to determine crop management practices and their relationships with root-rot incidence found that two-thirds of the indigenous women farmers agreed that rots constituted the main cassava-production problem. The farmers were willing to try new varieties, describing the characteristics that they preferred and helping the researchers choose four *chagras* (slash and burn cultivation), each from a different community. The farmers evaluated 10 CIAT materials and 9 local landraces according to their own selection criteria for the plant development stage: vigor, plant health, plant height, stems per plant, and days to maturity. At harvest the farmers also had specific criteria for adequate yield, starch content and planting materials (cuttings). The criteria identified resulted in a field book for evaluating cassava varieties in the zone. The farmers preferred the CIAT materials CM 2772-3 (sweet, with yellow pulp) and M Bra 97 (sweet, with white pulp) to the local landraces. Results (Fig. 1) were diffused, with farmers' participation, through meetings with communities along the Mitú-Monfort highway (Vaupés Province) and nongovernmental organizations (NGOs). A field day was also conducted in one of these communities (Mucura, Mitú township); and a pictographic handbook was published.

A



B

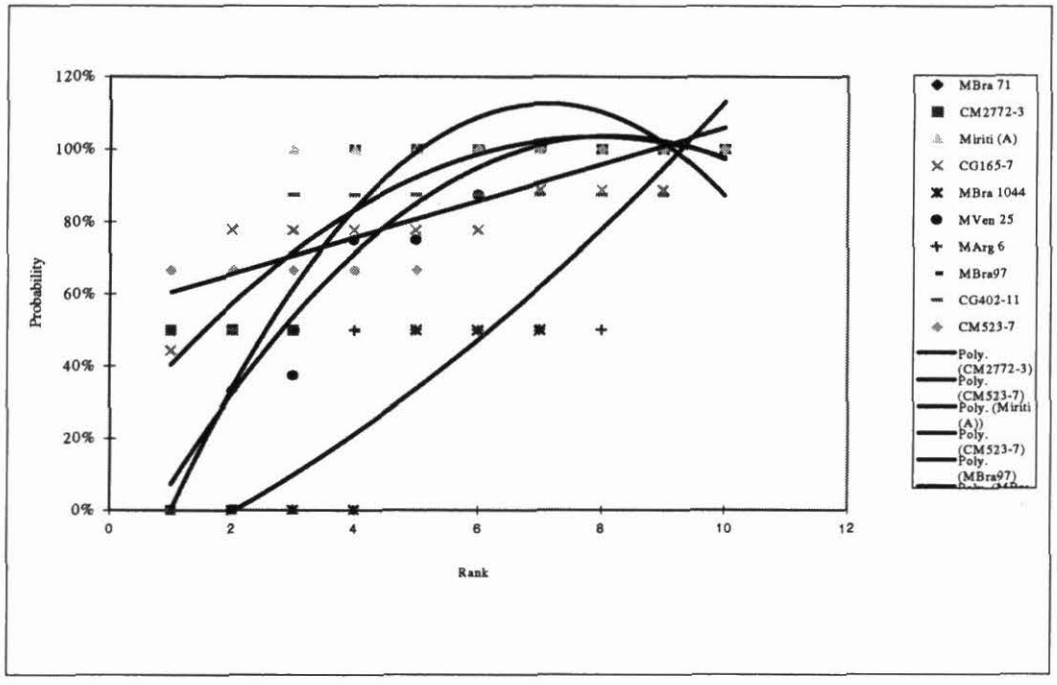


Figure 1. Comparison of the preference ranking of cassava genotypes evaluated at harvest (A) and for their starch quality (B) by Indian women in Mitú (Vaupés, Colombia), applying methodologies of participatory research. Preference ranking: 1 = high acceptance; 10 = low acceptance.

Follow-up of trainers from training of trainers course

Researchers: *Carlos Arturo Quirós and José Ignacio Roa*

Table 2 shows the different training events carried out by some of the agronomists who were trained in the II Training Trainers course held by the IPRA team at CIAT HQ in 1999. This table does not include information from FONAIAP, Venezuela, because at both the events held (Barquisimeto and Maracay), members of the IPRA team participated. The organization of the events and a good part of the training were, however, done by the people who were trained in the II Course.

Table 2. Training events carried out by some of the agronomists who were trained in the II Training Trainers course

Country	Institution	Training Event and/or Diffusion of CIAL Methodology	No. of Participating Institutions	No. of Participants
Honduras	**IPCA**	III Regional Encounter of CIALs. Honduras–Nicaragua. Siguatepeque, Sta. Bárbara	15	115
	UNIR/EAP-Zamorano Project	The CIAL methodology. Danlí, El Paraíso	2	13
		FPR in EAP	Students	120
Colombia	CORPOICA	I International Course on FPR in CIALs, Ibagué, Tolima	4	22
		I Regional Encounter of CIALs. Ventaquemada, Cundinamarca	3	25
		Course on FPR methodology. Valledupar, El Cesar	5	18
Ecuador	IIRR	Theoretical–practical course on CIAL methodology. Huaráz, Peru	4	10
		Theoretical–practical course on CIAL methodology. Quito	3	20
		Theoretical–practical course on CIAL methodology. San Isidro, Carchi	2	15
Bolivia	Fundación PROINPA	FPR course	1	53
		Short course on participatory diagnoses	2	8
		FPR course	Students	152
TOTALS	**6**	**12**	**41**	**571**

TecniCIAL-Honduras

Agronomists, Honduran Institutions

Another organizational model that has been functioning in Honduras is the so-called TecniCIAL, a group of agronomists who are working with the CIAL methodology in that country. This informal organization originated in the follow-up

events to the training offered in Course I in 1996. The group began to meet to discuss what was happening in the implementation of the methodology and to analyze the diverse situations occurring in the application of the CIAL method. These meeting were convened and financed every 6 months by the IPRA team. Today the group of institutions and agronomists are the ones who finance their meetings, which are convened according to their needs. Today the TecniCIAL meets at least every three months, and the meeting places are rotated among the four regional offices.

The objectives proposed by TecniCIAL were as follows:

- Analyze the different situations occurring the application of the CIAL methodology in the four regions of Honduras
- Discuss the methodological and technological innovations that can be considered for implementation by the farmers
- Communicate and disseminate the results obtained
- Organize the national encounter of CIALs
- Identify the mechanism of communication among participating institutions and coordinate the collection and shipping products and inputs to and from the different regional offices
- Identify those institutions that can offer technologies for the CIALs.
- Channel the demands for training from other institutions and coordinate their execution.

OUTPUT 4. MATERIALS AND INFORMATION ON PARTICIPATORY RESEARCH APPROACHES, ANALYTICAL TOOLS, INDIGENOUS KNOWLEDGE AND ORGANIZATIONAL PRINCIPLES, DEVELOPED

MILESTONES

* Materials for training course for CIAL facilitators, modified
* Final version software for logit analysis to analyze preference rankings, final versions in Spanish and English
* Spanish version of CIAL book edited
* Comparison of farmer field schools and CIALs presented and published
* Case study on CIPASLA, finished
* Material for CIAL Training Course I, revised and available on CD-ROM

Materials for training course for CIAL facilitators

In mid-1999 a training course was organized for preparing trainers from national programs to facilitate CIAL training courses in their respective countries. In addition to their preparation as facilitators, emphasis was placed on providing further training in areas where the participants felt a need; e.g., analysis of trial results. This added to the intensity of the course, and it was found that there was a need for more time to explore certain aspects in greater depth. Consequently, the IPRA team met after the course to discuss the content of the same, and a consultant was given the task of revising the content and developing new materials for a second course. For lack of funds, it was not possible to follow up all the trainees in their respective countries or test these new materials in a second course, after which they will be made available on CD.

Tools available

Software for statistical applications for analyzing preference ranking, final version in Spanish and English:

- *Title*: Logistic preference ranking analysis for evaluating technology options, A user's manual. Application for Microsoft Excel 7.0 by Luis Alfredo Hernández Romero, IPRA CIAT Project. Final version May 2000 (ISBN No. 958-694-0276-8)
- *Title*: Regresión Logística en el Análisis de Preferencias; Manual con Matriz en Excel 7.0 by Luis Alfredo Hernández Romero, CIAT IPRA project. Final version May 2000 (ISBN No. 958-694-0276-6)

CIAL book

In 1999 the English version of the book on the impact of the CIALs was edited. In 2000 it was published, and the Spanish version is in the process of being printed. The English version has been distributed both within and outside CIAT.

- Ashby, JA, AR Braun, T Gracia, M del P Guerrero, LA Hernández, CA Quirós and JI Roa. 2000. Investing in farmers as researchers; Experience with Local Agricultural Research Committees in Latin America. CIAT, Cali, Colombia. 199 pp.
- Ashby, JA, AR Braun, T Gracia, M del P Guerrero, LA Hernández, CA Quirós and JI Roa. Invirtiendo en los agricultores como investigadores: Experiencia de los Comités de Investigación Agrícola Local en América Latina. CIAT, Cali, Colombia. ±200 pp. (In press)

Comparison of farmer field schools and CIALs

Braun, AR, G Thiele and M Fernández. 2000. Farmer Field Schools and Local Agricultural Research Committees: Complementary platforms for integrated decision-making in sustainable agriculture. ODI AgREN Network Paper no. 105. 16 pp. Available on AgREN website: http:/www.odi.org.uk/agren/publist.html

Humphries, S, J Gonzales, Jose Jimenez and Fredy Sierra. 2000. Searching for sustainable land use practices in Honduras: Lessons from a program of participatory research with hillside farmers. ODI AgREN Network Paper no. 104. 16 pp. Available on AgREN website: http:/www.odi.org.uk/agren/publist.html

CIPASLA case study

Researcher: *Helena Aizen, Consultant*[1]
Collaborators:
Carlos Arturo Quirós, Magnolia Hurtado and Jorge Trujillo[2]

This historical case study, which was terminated in Dec. 1999, is available from IPRA electronically (55 pp.). CIPASLA, an Interinstitutional Consortium for Sustainable Agriculture in Hillsides, was created in response to initiatives of the CIAT Hillsides Program, which began a new project in the Ovejas River watershed in 1992. The purpose was to contribute to the dual objectives of increasing the food security of the farmers in Tropical America, while ensuring the sustainability of the natural resources.

Hillside agriculture in Tropical America is characterized by a vicious circle of poverty, which increases the degradation of the natural resources, which in turn increases poverty. The rural populations are forced to cultivate the marginal, highly fragile land. In order to break this circle, the Hillsides Program decided to

[1] Social anthropologist
[2] Researcher, SN-3; Coordinator, CIPASLA; and President of the Board of ASOBESURCA, respectively.

implement an institutional model for watershed management, capable of designing new tools for management of land-use systems, whereby a decision-support tool for managing the information would enable the users to link their local knowledge with external knowledge. This model implies an important institutional change, given that the regulatory and punitive measures traditionally employed by the institutions to improve natural resource management (NRM), have proven ineffective.

In order to revise the strategy and integrate the different sectors involved in NRM and prepare collective work plans, all the entities working in the Ovejas River watershed were convened at the end of 1992 to participate in a workshop, which led to the creation of the Interinstitutional Consortium for Sustainable Agriculture in Hillsides (CIPASLA).

The consortium, which began functioning with the economic support of international and national organisms, brought together governmental entities, NGOs, grassroots organizations and CIAT in the joint work that they have been carrying out since then. In a gradual learning process, an interinstitutional relationship has been developed that has made it possible to unify the criteria for action and the definition of common objectives.

The participating institutions—based on the assumption that the poverty of the individuals and the weakness of the community organizations are closely linked to the ecological damage in the hillsides environment—are committed to supporting the communities in their search for new options for increasing their income and improving their food security. Although the projects implemented by the consortium are aimed at diversifying production, commercialization and the introduction of new agroindustries, these activities are linked to soil conservation practices, the integrated management of crops and agroforestry systems, with the intention of providing economic incentives to the farmers in order to facilitate the adoption of ecologically sound practices.

Within the strategy developed by the consortium, the community organization and the development of their capacity for leadership play an important role. The creation of the Association of Beneficiaries (ASOBESURCA), formed by representatives of the local and village organizations, contributed in great measure to accomplishing this goal. ASOBESURCA is linked directly the Consortium's decision-making processes and has its own budget for financing small productive projects in the communities, and its relative autonomy enables it to act as an interlocutor between the communities and the entities, ensuring an ongoing process of consultation. The consortium brings together all the sectors involved in NRM, representing a space for discussion and negotiation that make it possible to develop and implement new technologies that emphasize the more efficient and equitable use of the resources. The participation of all the sectors, including those who are traditionally marginal in decision-making of this nature, ensures the sustainability of the process.

The work that CIPASLA has been carrying out over the past seven years has contributed to the strengthening of the community organization and their

leadership capacity, not only because it opened up a space where the communities are represented but also through training in different areas, enabling them to create new organizational forms linked to production and research. They have managed to recover ample degraded zones through reforestation, isolation of areas to protect water and establishment of live barriers, thanks to the large-scale participation of the community.

They have contributed to improving the information for conducting basic and participatory research in organic agriculture, validation of agrosilvopastoral systems, use of geographic information systems for decision-making and methodologies for the identification of potential zones for irrigation and indicators of water quality.

They generated, validated and adapted alternative technologies that guarantee food security and developed the implementation of local agroindustries based on marketing studies and support to commercialization networks.

Today, this process, begun in 1992, with its difficulties and accomplishments, represents a support model for the replications that are being implemented with similar characteristics in several Central American countries. At the national level, CIPASLA enjoys institutional recognition and has considerable support from the community.

The interinstitutional process is in itself an important result of the work carried out. The consortium has established a network of interconnections at all levels, thereby ensuring a constant flow of information and exchange and helping the community reach its objectives.

Training guide on CIAL method

Gracia, T, JA Ashby, M del P Guerrero, JI Roa, CA Quirós and AR Braun. Método CIAL: Guía de Capacitación. Proyecto IPRA, CIAT, Cali, Colombia. (CD-ROM)

This training material in Spanish consists of seven sections, each with its respective exercises and support materials, as follows: I. Introduction; II. Motivating communities for forming CIALs; III. Diagnosis; IV. Participatory planning of farmer trials; V. Evaluation, analysis and feedback to the community; VI. Monitoring; and VII. Confirmation of comprehension of methodology. The materials were revised and consolidated on CD-ROM for distribution to LAC countries.

Publications distributed

Table 1 shows the publications distributed within CIATand externally.

Table 1. Request for publications to the IPRA Project. October 1999 - September 2000

Date	Person Requesting	Publication	Institution
1999			
25-10	Norman Uphoff	Evaluating technology with farmers Preference ranking manual Open-ended interviewing manual CIAL book	
02-11	Les Swindale	IPRA method video CIAL video	ICRISAT
06-11	David Gibbon	CIAL video	Swedish University of Agricultural Sciences
16-12	Ursula Hollenweger	FFS/CIALs paper 1999 annual report	CIAT Africa
21-11	The Institute of Cultural Affairs	IPRA methods video	ICA Ghana
2000			
02-2	Reinhardt Howeler	Evaluating technology with farmers. A handbook CIAL handbooks	CIAT Thailand
01-3	Angel Pita Duque	Evaluación de nuevas variedades de yuca con la participación de agricultores. Doc. de Trabajo No. 130	Mexico
02-3	Louise Fortmann	Annual report 1999 SN-3	EPMR - USA
10-4	Elizabeth Byers	The CIALs at a glance	USA
12-4	Luis H. Fierro, M. Arévalo, Beatriz Franco	Investigación participativa con el agricultor en América Latina: 4 casos	CORPOICA – Santafé de Bogotá
17-4	Ramiro de la Cruz	ODI paper Article: Farmer participatory research in Latin America: Four cases	EARTH – San José, Costa Rica

OUTPUT 5: IMPACT OF IPRA PROJECT ACTIVITIES, DOCUMENTED

MILESTONES

* Participatory evaluation of live barriers, finished
* Theses dealing with the CIALs and other IPRA tools
* Evaluation of the CIAL strategy for developing technologies for other entities
* Data collection and analysis of a collaborative effort in Yorito (Honduras) and San Dionisio (Nicaragua) and impact evaluation of milestone related to Output 2, initiated
* Conceptual framework for monitoring impact, developed
* Professionals and technicians attended by the project

Agronomic and farmer participatory evaluation of live barriers of *Axonopus scoparius* and *Saccharum officinarum* on farms in the Cabuyal River watershed in the township of Caldono, Cauca Province (Colombia)

***BS thesis researcher**: Elías Claros Trujillo*[1]

Soil erosion is one of the problems that has most affected the development of agriculture and livestock production in Latin America. Soil degradation caused by erosion decreases the productivity of the crops, generating in the long term, a crisis that can seriously affect food security in addition to the hillside ecosystems with adverse consequences for biodiversity and the water table. Therefore, the implementation of soil conservation practices is fundamental for maintaining crop productive capacity.

In Colombia 27% of the country corresponds to the Andean hillside zones, which account for 70% of the population.[2] The hillsides are characterized by a high density of small farmers, who are poor or extremely poor from the standpoint of unsatisfied basic needs. One of their problems is that land use is limited to short-cycle crops that require frequent plantings and weeding such as maize, vegetables and common beans. Cassava is another crop with poor ground cover. This leads to problems of runoff and sedimentation, among others.

There has been a tendency for farmers not to adopt soil conservation practices for several reasons: Complicated techniques, technological components that are not linked to other farm activities, lack of technical assistance, high costs, few economic incentives or lack of short-term benefits.

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[1] Universidad Nacional de Colombia-Palmira.

[2] Colombia, Estadística, DANE, 1990.

An economic incentive could become a very strong motivator for the introduction of technologies such as live barriers, which are rows of perennial plants of dense growth, planted perpendicular to the slope, on the contour, between the crops and prevent erosion and soil degradation in general. Live barriers not only reduce the rate of runoff but also act as live filters, trapping the sediment carried by the runoff water. Live barriers have several advantages, including:

- Biomass from the vegetative material can be used for different purposes according to the species.
- Establishment costs are low, using family labor, requiring few tools and using local materials
- Farmers readily adopt them because they are easy to establish.
- Maintenance does not require much labor input.

Research site. In the township of Caldono farmers have gradually developed an awareness of the importance of conserving their own resources (soils, water, etc.). This is the result of an interinstitutional consortium (CIPASLA) in the province, which has been working with them to sensitize them with respect to the need for conserving their soils and water sources. CIAT, through several of its programs including that of Cassava, Hillsides, Soils and IPRA (FPR) and the demonstration farm SOL, among others, and entities such as FIDAR (Fundación para la Investigación y Desarrollo Agrícola), CORPOTUNIA (Corporación para el Desarrollo de Tunía) and CETEC (Corporación para Estudios Interdiciplinarios y Asesoría Técnica) have proposed the use of live barriers. Some of the farms in this area have adopted barrier systems, which are evaluated here.

General objective. The principal objective of this research was to evaluate the agronomic performance of live barriers of *Axonopus scoparius* (imperial grass var. 60) and *Saccharum officinarum* (sugarcane) on farms in the area of the Cabuyal River microwatershed in the township of Caldono, Cauca.

Specific objectives

- Determine the farmers' opinion and perceptions about the live barriers established on their farms
- Identify the species preferred by the farmers of the zone for establishing the live barriers on their farms
- Identify the criteria the farmers take into account when evaluating the live barriers.
- Identify what were their reasons for introducing or not the live barriers on their farms.
- Determine the production of the live barriers of imperial grass and sugarcane on some farmers, as well as on the SOL demonstration farm, to identify tendencies of production according to the different management given to the barriers and to the crops that affect them.

Characteristics of the zone. The Cabuyal River watershed is found in the Central Andean mountain range of the township of Caldono, Cauca Province. Work was carried out in the villages of Buenavista, La Primavera, La Esperanza, El Cidral, Los Quingos, La Laguna, Santa Barbara, Crucero de Pescador, La Campiña, Potrerillo, Palermo, Cabuyal, La Llanada, El Socorro, El Caimito and San Pedro (township Piendamó). The altitude ranges from 1000-3000 m, with temperatures ranging from 12-24°C. Annual rainfall ranges from 1000-1600 mm.

Methodology. Initially an open-ended survey was conducted in the zone to determine which farms had adopted the technology of live barriers. Then it was determined which of these farms had barriers in production, eradicated, recently planted or deteriorated in order to determine the species preferred for planting. The next step was to identify the reasons why the farmers had established these barriers and why some of them had been abandoned, had disappeared or were in poor condition so that it was possible to establish not only the negative aspects of the barriers but also the way they were incorporated on the farms. The final step was to determine the criteria the farmers use to evaluate the performance of these barriers.

In consultation with the advisory group, several farms were selected for an in-depth study of barrier management and production. In total 8 farms were selected: 4 with barriers of imperial grass and 4 with sugarcane barriers.

Results and discussion

- The species that were most commonly used as live barriers in the zone were imperial grass (56.4%), imperial grass var. Telembí Morado (51.3%), sugarcane (35.9%), elephant grass (12.8%), king grass (12.8%), vetiver (10.3%) and citronella (5.1%). Some farmers had several species planted in barriers.
- The most frequently cited reasons for using barriers were to control soil erosion (87.2%), use the barrier for feeding their animals (69.3%), to produce food for on-farm consumption (30.8%) or to produce income from the sale of the products; e.g., *panela* (30.8%), for managing runoff water (28.2%), for use as green manure of crops being affected by soil degradation resulting from continuous erosion (15.4%), or because it was a requisite for obtaining credit for planting another crop (15.4%) (Fig. 1).
  - Of the live barriers established in the zone, those that had greater acceptance because of their easy management and multiple uses were sugarcane (100%), imperial grass (86%), dwarf elephant grass (75%) and imperial grass var. Telembí Morado (62.9%).
  - The live barriers that offer the best projections for future establishment in the zone are sugarcane (76.9), imperial grass (64.1%), dwarf elephant grass (30.8%) and a live barrier that was not included in those already established in the zone, which is pineapple (25.6%)

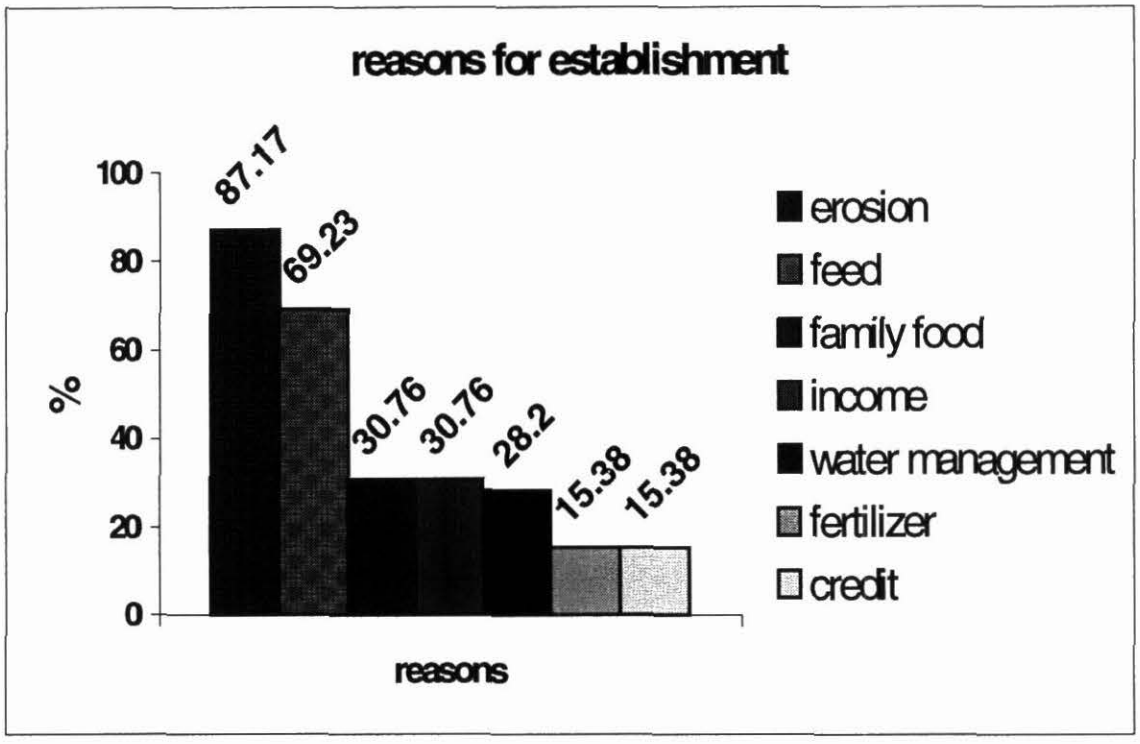

Figure 1. Reasons for establishment

Of the live barriers that had been planted as a requisite for obtaining credit, 68.2% have disappeared; 2.3% have for all practical purposes been abandoned; and only 29.3% are still in production (Fig. 2)

- In order to determine the production of imperial grass, cuts were made on the following farms: SOL, the hillside demonstration farm under CIAT"s administration; La "Morabia," property of Eliécer Patiño; "La Forcha" of Aru Patiño; and "La Pedregoza" of Luis Piyimue. The most important results are shown in Figure 3.

- The farms where the cane was cut were SOL; "San Calixto" of José Arnoldo Gonzáles; "El Morro" of Hermogenes Soto; and "La Camelia" of José Baicue. The results are given in kg of cane per meter of barrier, which is expressed as 1.4 m², kg of tops per meter of barrier, liters of juice per meter of barrier, and the number of kg of panela produced per meter of barrier (Fig. 4).

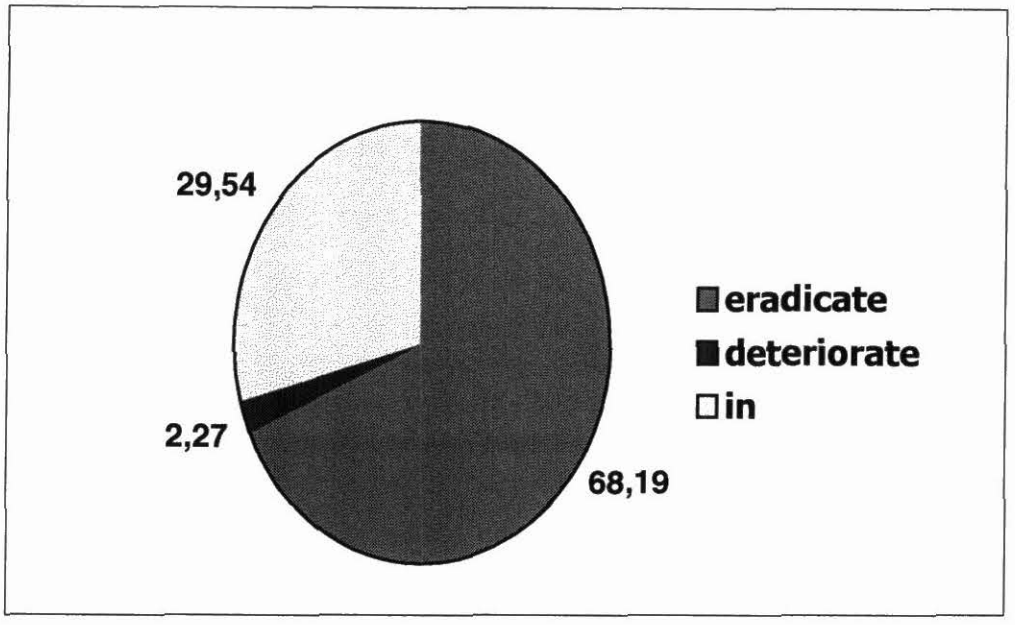

Figure 2. Live barriers sown for credit

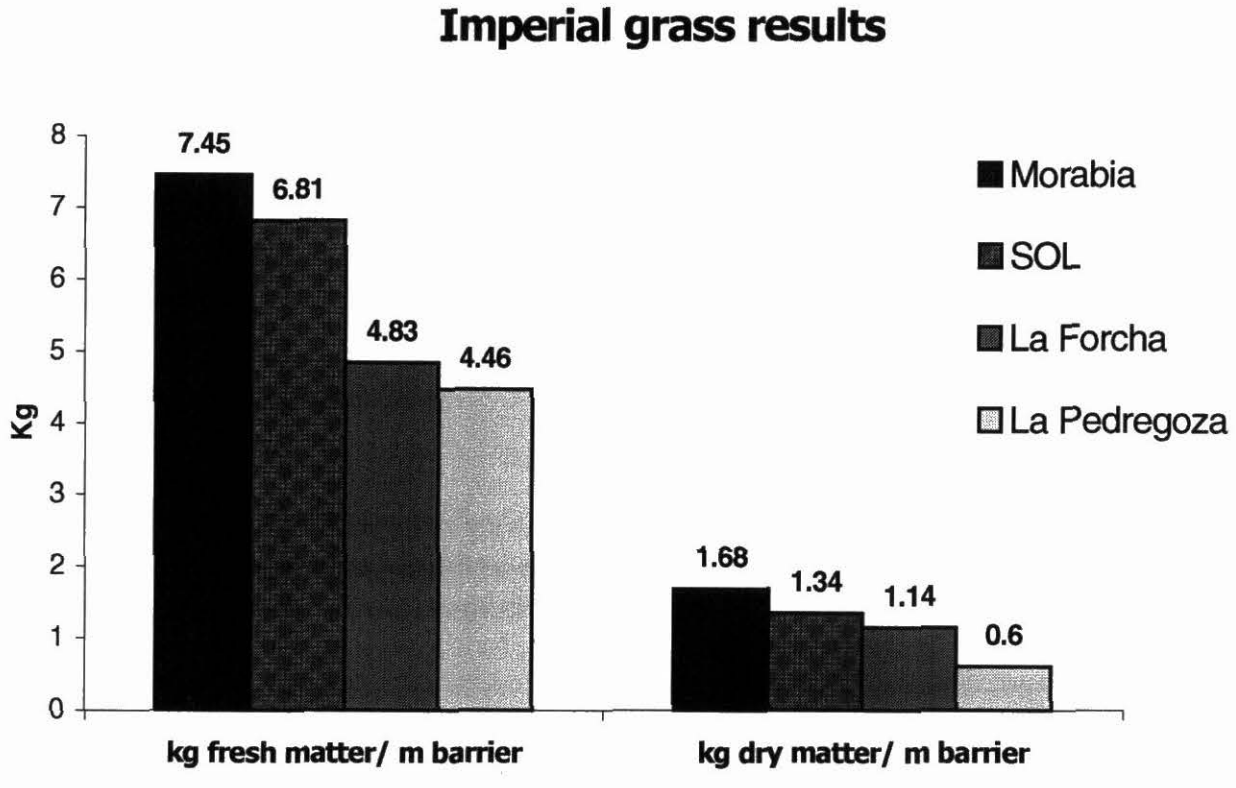

Figure 3. Imperial Grass Results

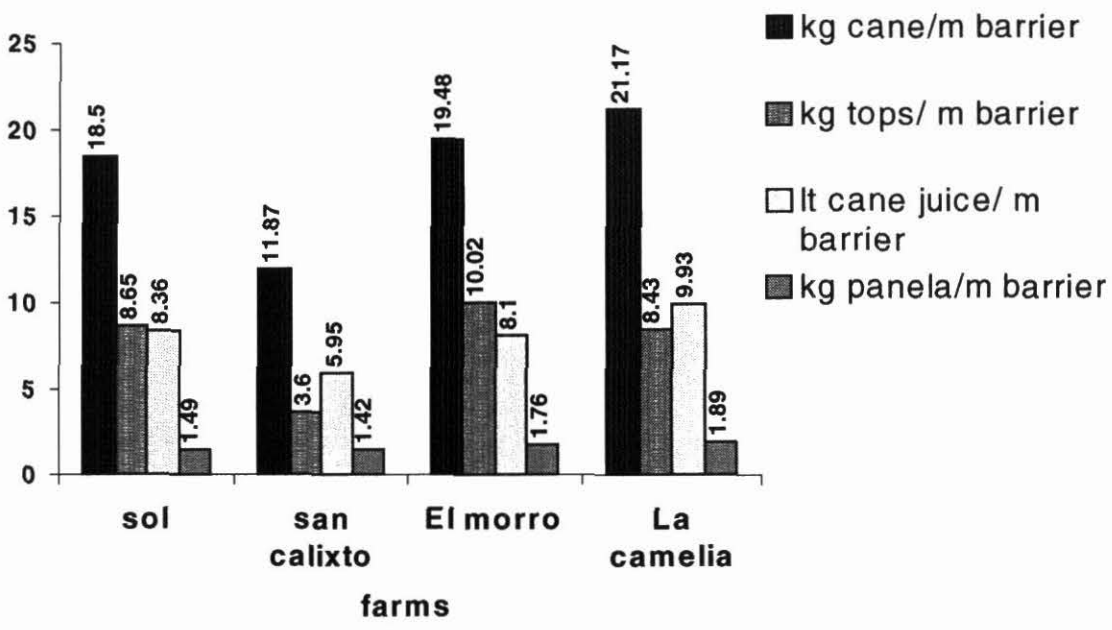

Figure 4. Sugarcane Results

Recommendations

- Future work with live barriers in the zone should take into account the species that have proven to have the best projection potential based on the farmers' preferences. Sugarcane has outstanding qualities for controlling erosion and for its multiple uses, which range from animal feed and human consumption to generating income through the sale of products such as panela. Second in importance is imperial grass, which has a very positive image among farmers as a live barrier. Other alternatives that offer potential are crops such as pineapple, which, although not being used at present, has good acceptance among the farmers and therefore offers good projections for establishment as a live barrier.

- The fact that farmers who are forced to implement a practice such as live barriers as a condition for credit tend to abandon it later should be taken into account when designing policies. Those farmers who made the decision to establish the barriers on their own, tended to value them more and became disseminators of the technology.

- Future work on live barriers should take into account species that offer multiple options, above and beyond that of erosion control: providing feed for the animals and food for the family, and generation of additional income (e.g., vegetable and fruit crops).

Theses dealing with the CIALs and other IPRA tools

- **Gamero Velasquez, NF,** 2000. Evaluación de ocho variedades de frijol (***Phaseolus vulgaris***) con productores investigadores, utilizando la regresión logística para el análisis de la información [Evaluation of 8 *Phaseolus vulgaris* varieties with farmer-researchers, using logit analysis to analyze the information]. Catacamas, Olancho. Undergraduate thesis, Agr. Eng., ENA, 73 pp.

  Agriculture plays a very important role in Honduras, where data generated by the Central Bank show that the GNP generated by agriculture in 1998 was greater than that for industry. Among the existing crops, the common bean is a basic staple and represents an important source of income for the small farmer. Agricultural research in general has been carried out at research centers or experiment stations with all the conditions necessary for successful production. The farmers have not participated in this process, which has made their access to new technologies difficult or in many cases, they are rejected. Given the foregoing the FPR methodology was developed, whereby producers with the support of researchers, identify and prioritize their problems, design their research trials and evaluate alternatives, which leads to the acceptance or rejection of the same.

  As a complement to PR, the IPRA project at CIAT (Colombia) created the program "Logit analysis in Preference Ranking," which analyzes the farmer's preferences for a given set of technologies. The product is the probability of acceptance of each of the technologies being evaluated. This program was tested for the first time in Honduras to evaluate 8 common bean varieties in the valley of Zamorano, with the participation of 13 producers from four communities, considered experts en the bean crop, carried out four evaluations: seed (dry and fresh), harvesting, cooking quality and flavor.

  Taking into account the ranking of the producers, their criteria and the results obtained with the program, the variety with the greatest probability of acceptance was El Dorado. The var. SRC 1-12-1, MD 23-24 and Tío Canela 75 had intermediate acceptance and should be included in future research.

  The other four varieties should be excluded from further research given their low acceptability by the farmers and should be replaced by others with greater potential.

  The program is suitable for any type of research done with producers, and the results complement the criteria of acceptance or rejection that the farmers use. Above all, the program is easy to use and interpret. This tool should be validated with the best varieties of the trials conducted or with other crops from the region.

- ***Vargas Cárdenas, FH. 2000.*** Farmers from the region of Yeguare accept improved common bean varieties. BS thesis research. School of Agronomy, EAP at Zamorano, Honduras.

The productivity of the common bean crop in the tropics is below yields obtained in developing countries. One of the major reasons for this problem is the use of local varieties that are susceptible to the attack of insects and diseases, in addition to their low yield potential.

In 1996 the UNIR/EAP-Zamorano project began PR processes with farmers from CIALs in the communities of Lavanderos and Tabla Grande in the region of Yeguare. The purpose was to facilitate the adoption of common bean varieties and improved lines that are suited to their production systems. In 1999 the Bean Research Program/EAP-Zamorano investigated the criteria used by the farmers in this process, as well as the patterns of preference for the potential accepting and adopting of said varieties and improved lines in these communities.

The farmers expressed the need for pest-resistant varieties as these traits ensure a minimum production for on-farm consumption. The farmers expressed a preference for varieties with a shiny red grain of commercial size (small). They would also be willing to accept darker red-grained varieties as long as their performance were good. The most important aspects related to consumption were smoothness of the grain and a thick broth.

The overall acceptance of the improved varieties was 85% in Lavanderos and 75% in Tabla Grande. There is a need to continue work on improving the pest resistance, using the full potential of varieties that perform well under their production conditions.

The focus of technology transfer with the active participation of the farmers, such as the case of the Local Agricultural Research Committees (CIALs), can facilitate and accelerate the process of evaluating and adopting technology.

▶ **Haddad, JR.** 2000. Local Agricultural Research Committees (CIALs), the efficient response to the distribution of improved seed. BS Thesis Research. School of Agronomy, EAP at Zamorano, Honduras.

As a result of hurricane Mitch, the destruction of crops throughout Honduras made it necessary to find an efficient form of distributing improved seed to be multiplied by farmers in the spring so that there would be sufficient seed available for the last planting season, which is when production is greatest. In addition to the foregoing, there is the problem that subsistence farmers use poor-quality seed; and as a result, percent germination and seed vigor are low, and yields are poor.

EAP-Zamorano was placed in charge of executing a USAID/DfID (UK)-financed development project that included seed production and its distribution, financed by Healing Hands International (HHI). In the region of the Yeguare River, located 45 km to the SE of Tegucigalpa, the effectiveness

of three channels for distributing improved seed for artisanal seed production of common beans was evaluated in the communities of Lizapa, Llano del Ocotal, San José de Tabla Grande and Limón. For each the two altitudinal zones, 15 farmers participated (30 producers), and both zones had the three different distribution channels: The CIALs, a Producers' Cooperative and independent producers.

The evaluation of the distribution channels was favorable for the CIALs, which produced 1573.5 Kg/ha, almost double that produced by the other two channels. It should be mentioned that in addition to the greater production, the CIALs were better organized and worked together better with respect to research. Their knowledge was better and they obtained higher yields. The production costs were also more favorable for the organized groups: US$67 for the CIALs and Cooperatives vs. US$212 for the independent producers.

Prizes or special mention granted to other institutions for using IPRA Project products

As a result of applying the CIAL methodology, several institutions have received prices or special mention in their respective countries or institutions. Three cases are presented here:

Project UNIR/EAP, Zamorano, Honduras.[3] This Kellogg Foundation project concluded its activities recently. In their final report they made reference to the impact that the CIAL methodology had had on other sections of the EAP. "The CIAL as an organizational body played a very important role as it permitted the organizations to be more efficient and obtain greater productivity." They also mentioned that the CIALs strengthened agricultural production in the communities through research projects that the Committees carried out for their communities. In the UNIR project, the CIAL project benefited from the participation of professors, students and, of course, all the members of the CIALs in the region of Yeguare. They also emphasized the role that the CIALs played in artisanal seed production and its distribution after the disaster of hurricane Mitch in 1998.

FEPROH, Fomento Evangélico para el Progreso de Honduras[4]. For the 5th National Forum on Sustainable Agriculture, information was collected on more than 50 experiences of local participation in the management and administration of these processes in both the public and private sector. Of these, only four were

[3] Source: UNIR/ZAMORANO, 1996 -1999. Programa de desarrollo sostenible de la región del Yeguare, Honduras C.A. Sponsored by the W.K. Kellogg Foundation.

[4] Source: Inventario de experiencias de gestión y administración local sobre ASEL. 5to Foro Nacional sobre Agricultura Sostenible. La Participación Local, Base para la Gestión Sostenible de los Recursos Naturales en las Laderas. Work carried out by Emprende Consultores S. de R.L. for CONASEL, Tegucigalpa, May 2000.

selected for presentation and discussion at the Forum. Among these was the experience of FEPROH, "CIAL network Vallecillo Francisco Morazan." This experience has been documented and presented by the farmers themselves, resulting in great success and the admiration of the participants.

CORPOICA, Corporación Colombiana de Investigación Agropecuaria, Regional 1, Colombia.[5] At its headquarters in Tibaitatá, the Regional Director, convened an Internal Technical Seminar on 14 July as part of the institution's policy to stimulate the scientific and technological work executed by the Corporation's human talent. The purpose was to select the five best works from the Regional office, carried out during 1999. The Committee awarded first place to Luis Humberto Fierro with his work entitled: "Experiences in Participatory Research —The CIAL methodology—in Boyacá and Cundinamarca."

On-site activities of impact assessment[6]

Contributor
Olaf Westermann

Collaborators
Veronica Gottret[7], Maria Eugenia Baltodano, Dominga Tijerino, Orlando Mejía, Luis Brizuela, Bruno Barbier[8] and the rest of the Impact Assessment Working Group.[9]

Objectives

- To develop a conceptual framework for monitoring, evaluation and impact assessment of CIAT-Hillsides (PE-3) work in the reference sites with specific emphasis on organizational models
- To gather data and experience from the reference sites for further elaboration and refinement of the impact assessment methodology.

Rationale and justification. *CIAT-Hillsides is committed to establishing a long-term impact evaluation process in its reference sites in order to:*

- Ensure the long-term development impact of its research, elaborating causal uptake paths with key stakeholders
- Guide its research process through the participatory development of a clear vision, objectives and research paths and milestones
- Provide feedback into the research processes to get new ideas, make corrections, change directions and identify new priority areas of research

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[5] Source: Transferencia al día. Regional 1, Cundinamarca y Boyacá. Boletín Informativo no. 018. Tibaitatá, Colombia, July 2000.
[6] For a cross-reference and more details on the conceptual framework and on other NRM outputs, see Veronica Gottret, SN-1.
[7] Impact Assessment Project, BP-1.
[8] CIAT Hillsides Project in Nicaragua and Honduras, respectively.
[9] Alejandro Imbach, Douglas White and Nathalie Beaulieu.

Methods 1 - Developing a conceptual framework. The process started by developing the CIAT-Hillsides' vision or final development objectives of the research output defined in the conceptual framework for the CIAT-NRM division. These were redefined and discussed at a two-day seminar on organizational processes held in Cali to exchange experiences among the researchers at the reference sites in Pucalpa, Cauca, San Dionisio and Yorito[10]. Then causal uptake paths were developed for each of the Hillsides outputs to the desired development impact or goal. Finally intermediate indicators for each step in the causal uptake path were selected, as well as final development indicators. Afterwards, methodologies and models for impact assessment analysis were defined to ensure that the data collected would be the most appropriate for the analysis. Finally, data collection methodologies, protocols and sampling strategies (including reference-site boundaries and limits) were defined and tested in the field with specific emphasis on institutional and community collaboration.

Results and discussion

The following tables summarize the outcomes, indicators and means of verification. These conceptual frameworks are very extensive, especially for the organizational models; but the exercise has been very useful as a planning tool for developing the impact evaluation methodology and for future directions of research with institutional and community organization. Such planning is seen as a learning process in itself, in which experiences from action research in the field interact closely with the informal process of exchanging experiences on organizational processes, which has been started among the reference sites in Honduras, Nicaragua, Colombia and Peru.

To make the conceptual frameworks for organizational models more operational, a diagram of the research path to development impact was made, emphasizing only important milestones (Fig. 1). This framework shows what is the path of desirable milestones that the Project expects to reach and what are the critical milestones that should be reached to achieve its development vision. Although organizational models are the backbone of the framework, specific emphasis is given to the importance and integration of other CIAT decision-support tools in the process.

[10] Peru, Colombia, Nicaragua and Honduras, respectively.

Table 1. Bioeconomic modeling in NRM.

Intermediate Outcome	*Indicators*	*Means of Verification*
1. Assess available data supplies and conduct surveys	✓ % secondary data ✓ survey	✓
2. Create database of socioeconomic and biophysical information	✓ yes/no responses from survey ✓ structure ✓ % complete	✓ surveys ✓ data files
3. Stakeholders trained in the use of the model	✓ no. of workshops ✓ comprehension of training material	✓ workshop evaluation
4. *Economic and environmental* feasibility of land-use options examined and understood by using the model	✓ *no. of uses of tool* ✓ level of understanding	✓ evaluation of tool users via interviews
5. Information disseminated to *identified key policymakers*	✓ no. of reports ✓ no. of projects influenced	✓
6. Policymakers understand and use the information to formulate and implement *sustainable policies*	✓ no. of projects funded ✓ funds obtained ($) ✓ no. of policies influenced	✓ interview of policymakers

Table 2. Cropping systems options (SOL) in NRM.

Intermediate Outcome	*Indicators*	*Means of Verification*
1. Network of institutions and organizations working with technology development and extension ***(see Output 2)***		
2. Technological options for hillsides cropping systems available and diffused to farmers through the SOL	✓ No. of options ✓ No. of visiting farmers ✓ No. of farmers aware	✓
3. Farmers experiment with new technological options	✓ No. of farmers ✓ Area	✓ HH survey
4. *Farmers adopt new technological options*	✓ No. of farmers ✓ Area	✓ HH survey
5. Productivity of farmers who adopt the new technological options, increases	✓ Change t/ha	✓ HH survey
6. Production costs of farmers who adopt the new technological options, decrease	✓ Change production costs/ha ✓ Change net benefits/ha	✓ HH survey

Methods 2 - Impact evaluation in Central America. The fieldwork conducted in Honduras and Nicaragua consisted mainly of semistructured interviews and participatory exercises with regional and local institutions and community organizations, both individually and in focus groups. Furthermore, some interviews were conducted with selected communities. The objectives were as follows:

- To present and share the process of impact evaluation with the local CIAT teams in Nicaragua and Honduras in order to increase their long-term

capacity, interest and commitment to the work. Part of this task was accomplished with the Central American Hillsides teams—Maria Eugenia Baltodano and Dominga Tijerino in Nicaragua and Orlando Mejía and Luis Brizuela in Honduras—who participated in all stages of the fieldwork.

- To initiate an inventory of available information and key stakeholders in order to specify the framework and methodologies to be used. The development of the framework and methodology is an ongoing process, which is far from completed.
- To adjust and validate CIAT's development-impact vision with the CIAT local teams, local institutional partners, community organizations and selected members of communities. Hence all individual interviews and group meetings included the elaboration of key stakeholders' individual or shared vision, either through interviews or specific exercises developed for the purpose. Furthermore, short or more thorough introductions to the development vision and the impact evaluation process were given, depending on the nature of the interview or meeting. As a result, it is expected in the long run to establish a process of negotiation and prioritization of development-impact indicators among the different stakeholders.
- To make an initial assessment of social and human indicators with a focus on institutional collaboration for NRM, agricultural research and agroenterprise development activities. For this purpose interview guides were prepared, and the Venn-diagram exercise was used.
- To make an initial analysis of the use and usefulness of CIAT decision-support tools (DSTs) by key stakeholders in the reference sites and to assess the effect of the DSTs at these sites. This inquiry was based on semistructured interviews as well.
- ***Results and discussion (method 2)***. The products of the fieldwork in Central America are being prepared with some initial analysis. The six major outputs, as well as an initial analysis of the extent to which the critical path towards development was achieved, are summarized here:
  - All the interviews and workshops were taped and are transcribed.
  - A summary of all interviews was written in chronological order (almost complete)
  - An inventory of the different surveys and interviews conducted in San Dionisio and Yorito has been made. This inventory includes the...
    - ✓ name of the study
    - ✓ content of the survey and/or interview
    - ✓ sampling procedure, if available
    - ✓ availability of the data set in the CIAT offices or if an agreement is needed with the institution that owns the data set.

- Based on this information an analysis is being conducted for each critical path including:
  - ✓ a list of proposed indicators for the critical path
  - ✓ an analysis of the extent to which this critical path was achieved
  - ✓ an evaluation of the usefulness of the proposed indicators (This analysis is presented in more details below. It should be noted that the paths-to-development impact was generated as a result of ongoing research and continued feedback, not as a preplanned process. Thus many milestones in the path have either not been completed or only partially so
  - ✓ needs for further information and analysis

  The set of preliminary development impact indicators developed for the four types of capitals (human, social, economic/financial and natural) are being contrasted with the development visions defined in the workshops with CLODEST (Comité Local para el Desarrollo Sostenible de la Cuenca del Rio Tascalapa, Honduras), REDOLLYS (Red de Organizaciones Locales de Yorito Sulaco) and Campos Verdes. Moreover, the short-term expected changes are contrasted with the paths-to-development impact developed for the PE-3 and SN-1 projects.

Stakeholder analysis

- The stakeholder analysis developed by the Hillsides Project has not been used formally to identify institutions and community organizations that form part of CamposVerdes, REDOLLYS and CLODEST given the fact that this methodology was developed for analysis of stakeholder groups within communities.
- Nevertheless, an analysis of representation was done afterwards for Campos Verdes, replacing several of the community representatives in the association.
- In the case of REDOLLYs an inventory of community organizations was done, and all were invited to participate in the network, but a specific analysis of interrelations and interests was not done as such.

Networks of community organizations established and functioning

- Formal structural network of community organizations has been established (Campos Verdes and REDOLLYS).
- In the case of Campos Verdes the network has not been able to fulfil the objectives of collaboration and coordination among a diversity of community organizations. Campos Verdes is regarded more as another community organization rather than a network of collaborators.
- This may be a reflection of the lack of coordination among the external institutions that have each promoted its own community organization at its reference sites.

- In the case of REDOLLYS it appears that the participating community organizations do perceive REDOLLYS as a network, but further research is needed to estimate the level of collaboration among them.
- The most obvious kind of informal coordination that occurs in both cases is among local leaders who participate in several different community organizations at the same time, drawing heavily on their time and resources.

Process of interinstitutional coordination facilitated

- In the case of San Dionisio no formal coordination structures have been established. Nevertheless, there has been some level of bilateral coordination between CIAT and another organization in relation to specific activities. Furthermore, a multilateral type of collaboration is starting to emerge around the SOL (Supermercado de Opciones para Ladera) activities.
- In the case of CLODEST a formal structure for interinstitutional collaboration has been established. However important support organizations have withdrawn from Yorito (IICA-Holanda, DRI-Yoro) or been restructured (DICTA - Dirección de Ciencia y Tecnología Agropecuaria de Honduras). This has implications for the level of coordination that can be achieved among the institutions participating in CLODEST.

A forum established for coordinated planning

- CLODEST is well represented by community organizations; but their actual levels of participation, leadership and decision-making have to be researched further.
- The activities coordinated by CLODEST seem to more of an ad hoc nature rather than as part of a coordinated planning process with shared vision for NRM among the participating institutions.
- It may be observed that the organizational processes in Yorito and San Dionisio have followed two different strategies. In Yorito the process has included three steps:
  - ✓ establishment of a forum for stakeholder involvement and coordination (including institutions and community organizations)
  - ✓ creation of an interinstitutional consortium
  - ✓ creation of a network of community organizations

  In San Dionisio the focus this far has been on strengthening the network of community organizations
- An important conclusion for further research on organizational processes is that although it seems that the process of formal collaboration is more advanced in Yorito, there are still problems of participation and real motivation. In San Dionisio Campos Verdes has been focusing more on specific activities than organizational collaboration. However the organization function and the process of informal collaboration is growing. At the same time all of the institutions interviewed are now asking for institutional coordination, an indication of genuine interest.

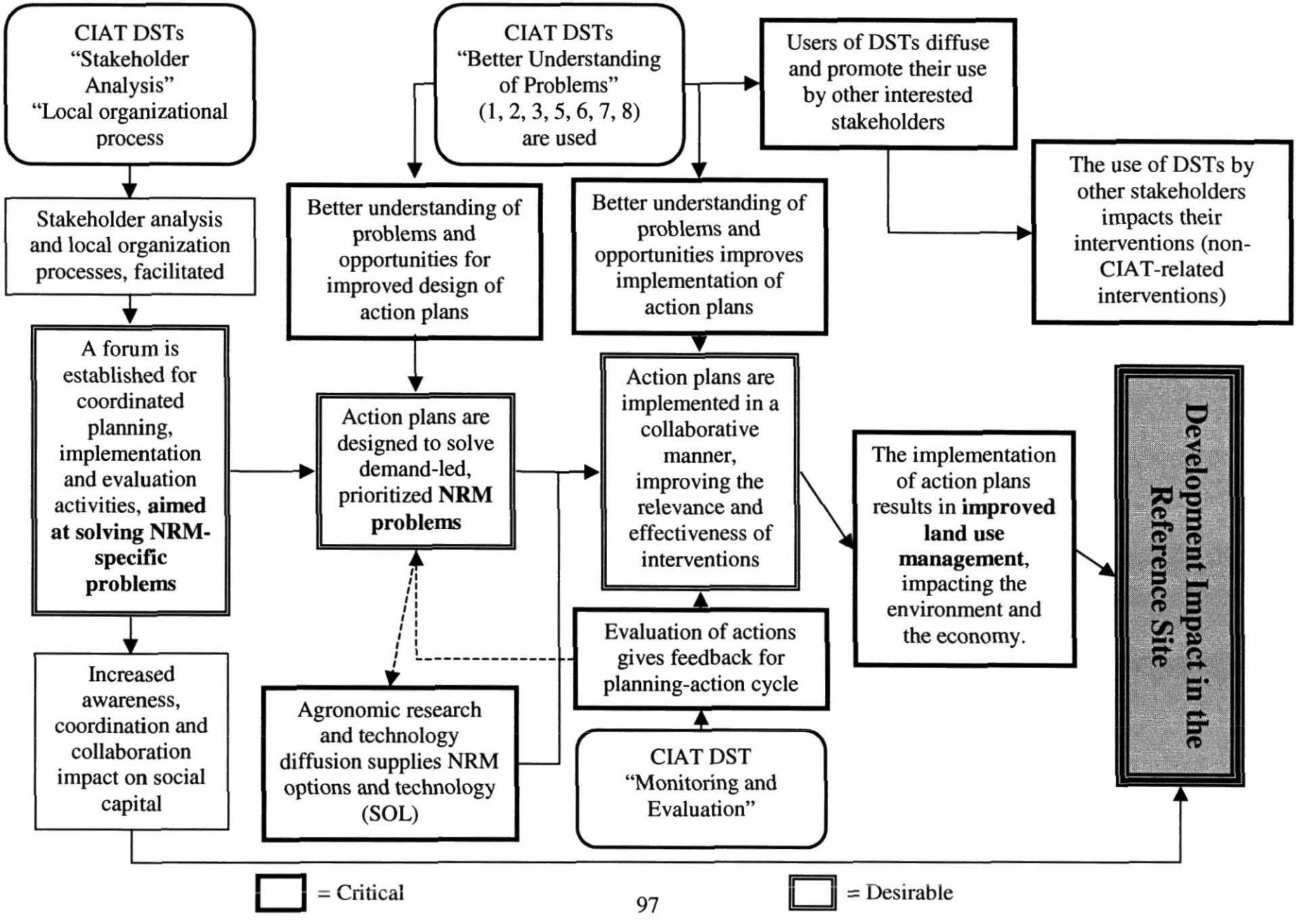
Action plans designed and implemented for NRM using CIAT DST. Partners and institutions at the reference sites are aware and to some extent have been exposed to the tools, but they have yet to use them for their own planning and implementation processes. A first assessment of the reasons for this shows that:

- The tools are useful to design new projects but are not perceived to be useful for ongoing or finishing projects
- The majority of the institutions say they will use the tools in new projects, adjusting them to their specific needs. PRODESSA, for example, would like to apply the market and opportunity identification and evaluation tool, but they would like a more participatory process.
- Another option is that they may take some ideas and construct their own research process.

Improved land use management

- Although there are some signs of improved land management (in Yorito it is estimated that 30% of the farmers are using soil conservation measures), it remains to be verified if and how this is related to CIAT research activities.
- Although production systems are mainly traditional (maize, common beans and coffee), there are small signs of diversification and a growing demand for market and commercialization support. This may indicate that some surplus production is starting to be available after satisfying basic food security needs, especially in Yorito.

Paths to Development Impact: Interinstitutional Consortium and Selected DSTs



Publications and training materials by institutions working with FPR in cassava

CNPMF has published the following documents:

- Wânia Maria Gonçalves Fukuda; Mauto de Souza Diniz; Ranulfo Correa Caldas. 1999. Analise de estabilidade de novos clones de mandioca avaliados em provas participativas com agricultores nos tabuleiros costeiros do estado da Bahia. Boletin de Pesquisa no. 16. EMBRAPA Mandioca e Fruticultura.
- Wânia Maria Gonçalves Fukuda; Chigueru Fukuda; Carlos Estevão Leite Cardoso; Osorio Lima Vasconcelos; Luis Carlos Nunes. 2000. Implantação e evolução dos trabalhos de pesquisa participativa em melhoramiento de mandioca no nordeste brasilero. Documentos CNPMF no. 92. Cruz das Almas Bahia.
- Wânia Maria Gonçalves Fukuda; Mauto de Souza Diniz; Ranulfo Correa Caldas. 1999. Luis Alfredo Hernández Romero; Carlos Iglesias. Analize de preferencia de novos clones de mandioca avaliados em provas participativas con agricultores nos tabuleiros costeiros do estado da Bahia. Boletin de Pesquisa no 15. EMBRAPA Mandioca e Fruticultura.

VISITORS ATTENDED BY STAFF FROM THE IPRA TEAM

September 1999 – September 2000

Date	Name	Position	Country	In Charge
Sept. 30	Claude Nankam James Chapman	World Vision	USA	A Braun
Oct. 28	Gloria Meléndez	IDRC Consultancy	Canada	CA Quirós
Nov. 3	Jorge Zambrano	Former advisor to Ecuatorian Congress on agrarian affairs	Ecuador Universidad UTE, AP 172417, Santo Domingo Cadrai@aulo.satnet.net	PR & NR
Nov. 17	Julio César Toro	Advisor, EIAG, Rivas	Nicaragua Tel. 4533551/4534390 Fax 4533957 Email: Eiag@tmx.com.ni	CA Quirós
Nov. 17	Francisco Silva Valverde Martín Jiménez	Rural Extension	Nicaragua	CA Quirós
Dec. 6	Jorge (5 people in all)	UMATA	Colombia Municipio de Cali	CA Quirós
Dec. 6	Freddy Lizcano	UMATA	Colombia Municipio de Cali Tel. 550 1357	CA Quirós
Dec. 9	Carlos Manchego	Head, Planning Office, "CIAT"	Bolivia Santa Cruz	A Braun
2000				
Jan. 19	Louise Fortmann	Reviewer - EPMR	Universidad de California, U.S	A Braun
Jan. 27 & 28	J.I. Maillat Edmundo Acevedo Eduardo Venezian Coffman Imonen D. Plucknett Ter Kuile	Reviewers - EPMR	U.S	A Braun
Feb. 11	Arnulfo Gómez Carabalí Carlos Castilla	Universidad del Pacífico	Colombia	JI Roa

Date	Name	Position	Country	In Charge
Feb.18	Sally Humphries	University of Guelph – Ontario (C)	Canada	A Braun JI Roa
Feb. 22	Emil Q. Javier	TAC Chairman	Filipinas	A Braun
Feb. 29	Silvio Sinisterra Rafael Córdoba J. Elías Córdoba	Advisor, Province of Cauca Advisor, Province of Chocó Regional Advisor, Productive Activities Program, IDB, Plan Pacífico, Depto. Nacional de Planeación	Colombia	A Braun
April 12	Carlos E. Castilla	Director of Research, Agronomy Program for the Humid Tropics, Universidad del Pacífico	Colombia Av. Simón Bolívar #54A-10 Tel. (092) 2449675 Buenaventura E-mail: unpa-tb@col2.telecom.com.co	CA Quirós
April 27	Pedro Valencia Paula Uribe Adriana Giraldo Mariela Rivero	Director Researcher Researcher Researcher UNIR Project – Universidad Autónoma de Manizales	Colombia Tel. 8863214 (Of.) Tel. 8866532 (Home) Cel. 5406239 Email: Pedroval@latinmail.com	CA Quirós (Contacts among Kellogg projects – posible interaction)
May 3	Olga Sánchez	Coordinador, TELECENTROS	Colombia	CA Quirós
May 10	Franklin Rosales	INIBAP	Colombia	CA Quirós
May 18	Fredy Parra	CORPOICA	Colombia Fparra@telesat.com.co	CA Quirós Interaction with CIPASLA projects
June 9	Norberto Zambrano Alfonso Truque 10 farmers	CORFOCIAL CORFOCIAL Quisgó Indian Reservation– Silvia (Cauca)	Colombia	JI Roa
June 20	Paul Harding	DfID	UK	LA Hernández
July 21	Daniel Selener	IIRR	Ecuador	CA Quiros/JI Roa
July 24	Javier Moncayo Ricardo Sánchez	Director, Projects Unit Coordinator, CIAT PDPMM Pact	Colombia	CA Quirós
July 27	Teresita Cárdenas Raúl Varela	UMATA-Caicedonia Comité de Cafeteros (Caicedonia)	Colombia	JL Cabrera F Escobar
Aug. 9	Alfonso Truque & Group of farmers	CORFOCIAL, Tambo (Cauca)	Colombia	JL Cabrera F Escobar

Date	Name	Position	Country	In Charge
Sept. 14	Héctor Valbuena	President, Asociación de Frijoleros del Sur de Bolívar, UMATA y Minera del Sur de Bolívar	Colombia	CA Quirós Interest in CIAL methodology
Sept. 14	Pedro Bautista	UMATA-Morales	Colombia	CA Quirós
Sept. 14	Franklin Angarita	UMATA-Santa Rosa	Colombia	CA Quirós
Sept. 14	Muffi Jorge Rueda	UMATA-Morales	Colombia	CA Quirós
Sept. 14	Luis Fdo. Villegas	COLNIBAN	Colombia	CA Quirós
Sept. 14	Juan C. Mendeta	UMATA-Morales	Colombia	CA Quirós

OUTPUT 6: Projects and other institutions supported and strengthened

MILESTONES

* National programs strengthened
* Local organizations strengthened
* CIAL microenterprises supported
* Database on CIALs in LAC available for internal and external consultation

National programs strengthened

Supporting NARS and NGOs in evaluation and selection of multipurpose forages for crop/livestock systems with farmer participation[1]

Researcher: *Luis Alfredo Hernández Romero*

- *Highlights*

  - NGO and NARS partners trained to contribute to participatory selection of forages.
  - Innovative farmers in Honduras test selected grasses on their farms.
  - Major problems with respect to forage production identified by farmers in Honduras, Nicaragua and Costa Rica.
  - More than 100 farmers start participatory selection of improved forage options
  - Seed production method by farmers

Forage germplasm in its multiple uses—for example, as feed, for suppressing weeds, maintaining and improving soil fertility, and for erosion control—could play an important role in improving the well being of the small- and medium-sized farmers in the Central American hillsides. Adoption—particularly of forage legumes—has been limited, however, possibly due to lack of direct interaction with the farmers.

Given the foregoing, it was decided to develop forage germplasm technologies with farmers, using participatory approaches. A combination of agronomic evaluation techniques, participatory technologies, soil indicators, socioeconomic studies and GIS tools were employed. To initiate this process, several training and planing activities with involved partners were executed, including:

[1] *Support for Michael Peters, Researcher, Tropical Forages Project IP-5, on special project funded by BMZ.*

- A course on Methods and Techniques of Participatory Research was carried out at CIAT in Feb./March for 12 participants from Honduras, Nicaragua, Costa Rica and Colombia.

- Staff from various national and international R&D institutions and NGOs in Honduras (CIAT, DICTA and SERTEDESO), Nicaragua (CIAT, INTA and PRODESSA) and Costa Rica (MAG and Fundación Ecotrópica) were trained in methods of stakeholder analysis (May).

- A major activity was a project planing workshop held for 15 officials from institutions in Honduras (CIAT, DICTA, SERTEDESO), Nicaragua (CIAT, INTA, PRODESSA), Costa Rica (CIAT, IICA-GTZ, MAG,

- Fundación Ecotrópica (Costa Rica), Colombia (CIAT) and Germany (University of Hohenheim) in Comayagua, Honduras. Staff from IICA-GTZ, Costa Rica, facilitated the course.

- *Progress*

  - **Participatory diagnosis in three communities in the Department of Yoro, Honduras.** Of the 59 persons who took part in the participatory diagnosis, 45% were women. The participants' ages were very diverse, ranging from 18-75 years. Both livestock and/or crop farmers, responsible for various activities in the field and at the homestead, were involved.

The diagnosis included plenary sessions and small-group activities, leading to the identification and prioritization of problems as related to agriculture and NRM, with emphasis on forages. The diagnoses were done at three sites in and around CIAT's reference site Yorito (El Jícaro in Victoria, Las Cañas in Sulaco and Luquigue in Yorito). These sites are characterized by a hilly topography with slopes of 30-50%. Altitudes range from 50-650 m. Annual rainfall is 1200-1500 mm, with 5 rainy, 5 dry and 2 moderately dry months; Conifers characterize the forest. Soils are moderately acid-to-neutral clay. Temperatures range from 24-30°C. The main agronomic activities include maize and common bean cultivation and small-scale livestock production.

In all the diagnoses the women's participation was significant, except at Luquique, where only 18% of the participants were women. Common problems identified across the 3 communities include:

- Erosion, lack of water, burning, deforestation, low productivity of the resource base and low fertility

- Free roaming of animals in the dry season, lack of wood (poles and firewood), lack of land and lack of green material in the dry season for conservation and as feed
- Lack of technology options and support, lack of seed and planting material
- Interestingly, one group mentioned their own lack of interest in improving their situation as a problem.
- Most problems were closely related to the lack of feed for animals (particularly during dry periods), soil degradation and lack of firewood. Results of the prioritization of these problems were heterogeneous, but tended to emphasize the lack of suitable planting material and lack of livestock feed particularly during the dry season. The communities had a clear perception of the degradation of soils and deforestation and their inherent negative effects on the communities.

The farmers were motivated to participate in the project because by addressing the aforementioned problems, family income and both family and community nutrition would be improved.

Centro de Investigation Agrícola Tropical- CIAT, Santa Cruz, Bolivia

Trudy Brekelbaum[2], Verónica Gottret[3], Dean Holland[4]

From 10-14 April, a team of three CIAT consultants traveled to Bolivia to follow up on the initial phase of this institutional strengthening project (see 1999 Annual Report, p. 93). A Planning and Reflection workshop was held outside Santa Cruz. The purpose was to ***"Construct a Strategy and a Methodology for Incorporating a Participatory Research Focus in CIAT-Bolivia."*** Specifically, the consultants and their counterparts from CIAT-Bolivia carried out the following activities during the workshop:

- Analyzed the conceptualization and focus on PR and come up with a joint definition of the basic concepts for the project
- Presented and analyzed case studies with a PR focus in Latin America that are relevant for CIAT-Bolivia (e.g. Campesino-a-Campesino, CIALs, Farmers Field Schools)
- Oriented the technical team of the project and researchers interested in using PR methodologies, techniques and tools
- Analyzed the minimum profile of the PR project and make the technical and methodological recommendations for its execution and propose adjustments to the concept note.

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[2] *PhD in Interdisciplinary studies, IPRA Consultant.*
[3] *Ms in Food and Resource Economics, SN-1 Agroenterprises.*
[4] *PhD in Agricultural Extension and Rural Development, PE-5, Sustainable Systems for Smallholders.*

The CIAT-Bolivia group decided it was important to organize their interactions on a more formal basis. Thus they decided to form a CIAL (called CIAC in Bolivia) of researchers who have sufficient time, interest and who want to participate. At the same time, the idea of forming a Group of Mentors, whose role would be to support the CIAC, was proposed. The two bodies would maintain a continuous flow of information between them. The members of the CIAC were elected and functions for this Ad Hoc Committee (1 July 2000) were proposed, together with a schedule of the tasks to be carried out. The primary task was to finalize the proposal of the draft concept note, which was prepared by the CIAT-Colombia consultants as part of the consultancy. CIAT-Bolivia will look for funds to finance this interinstitutional project, with the possible participation of IPRA and Agroindustry (PE-3).

In addition to the workshop materials, the CIAT-Colombia consultants gave the group publications to enrich their experience with respect to:

- ✓ quantifying farmers preferences with respect to varietal evaluation based on logit analysis
- ✓ criteria for selecting CIAL communities
- ✓ a typology of participation prepared by the Systemwide Program PRGA
- ✓ brain maps

Consultancy for IAPAR, Brazil

Researcher: *José Ignacio Roa*

The farmer-experimenters project was the initiative of the IAPAR (Instituto Agronômico do Paraná) Production Systems Program with financial support from PRONAF. An agreement was signed among the Rural Workers Union in Central-Southern Paraná, AS-PTA (Asesoría de Proyectos en Agricultura Alternativa) and the IAPAR Production Systems Program. The main objective was to improve the communication among the different actors with respect to the identification of research demands and the development and implementation of institutional R&D projects.

The objectives of this consultancy, which was carried out from May 4-12, were to:

- ➤ Visit their farmer-experimenter participatory projects
- ➤ Present a seminar on the IPRA experience to a broad audience of extension agents, farmers and researchers, with the purpose of sensitizing them to the importance of the proposal
- ➤ Collaborate on the preparation of a methodological proposal for setting up a pilot project on CIALs to be executed jointly with AS-PTA, IAPAR and the farmers.

In the visits to the communities, there was an opportunity to interact with some farmer-experimenter groups in the townships of Rio Azul, Irati, San Mateo del Sur and Antonio Olinto. Field visits were made to experiments promoted by

FORUM (farmers) and PSP (Proyecto de Plantío Directo en Centro Sur). Members of PSP, FORUM AS-PTA and the CIRAD-PRIAG Project. At the end of the two weeks, the foundations of an action plan between IAPAR/PSP were developed. The purpose is to continue work with the existing farmer-researcher groups in order to strengthen, improve and complement the processes begun with the farmers.

Local organizations strengthened

Researchers: *Carlos Arturo Quirós and José Ignacio Roa*
Collaborator:
Freddy Escobar, IPRA technician

Support for CIPASLA. Since its creation in 1992, IPRA has been providing support to the different activities related to the Interinstitutional Consortium for Sustainable Agriculture in Hillsides (CIPASLA). This year the activities have tended to decrease as several projects have terminated. At present the objective is to present proposals for providing continuity to ongoing work.

The institutions that continue participating actively in the area with projects are as follows: CETEC, SENA, FIDAR, CORPOTUNIA, CRC, FEDECAFÉ, UMATA and CIAT, in addition to local organizations such as ASOBESURCA, CORFOCIAL and the Aqueduct Board. Other institutions such as ICA, the Provincial Department of Agriculture and CORPOICA have continued to participate actively in the meetings and are currently in the process of presenting projects for beginning or reinitiating activities with the community in the Cabuyal River microwatershed.

IPRA's support has been with respect to the following activities:

- Participation in the activities of the Support Committee or the assembly of representatives every three months.
  - ✓ Scientific support to the Project "Adaptation of in vitro material of plantains in order to improve the production of small farmers in the lower and medium-altitude zones of the Ovejas River watershed in the township of Caldono, Cauca, implemented by SENA in four communities
  - ✓ Formulation of the new interinstitutional pact
  - ✓ Participation in the discussions for designing and supporting the project: ".Conservation of soils and recovery of degraded areas in the Cauca River watershed, presented to CRC
  - ✓ Participatory diagnosis within the assembly of representatives in search of alternatives for financing the Consortium
  - ✓ Coordination and collaboration in the construction of the case study of the Consortium, written by Elena Haisen
- Participation in the meetings of the Board of Directors
  - ✓ Analysis and presentation of the Consortium's budget
  - ✓ Formulation of the system for evaluating the Consortium's employees

- ✓ Selection of the new coordinator
- ✓ Direct administrative support for the new coordinator

Support for ASOBESURCA. Strengthening the Association of Beneficiaries of the Cabuyal River microwatershed (ASOBESURCA) has been central to both CIPASLA and the IPRA project. The support is based on trying to build their self-reliance based on accompaniment and follow-up to activities requested by them, among which are the following:

- ➤ Attend the monthly meetings of the delegates from the villages, without the right to vote
- ➤ Accompany and supervise the treasurer in authorization of expenditures
- ➤ Participate in the identification and construction of the profile for a technical assistant who would work exclusively for ASOBESURCA's projects

Activities with the Solidarity Fund Committee for earthquake victims in the coffee-growing zone in Caicedonia, Valle

Researchers: Carlos Arturo Quirós and José Ignacio Roa
Collaborators:
Mercedes Mejia, Aydeé Salas, Teresa Cárdenas, Raúl Varela[5]

As a result of the earthquake in January 1999, CIAT employees contributed to the alleviation of the problem, collecting Ps$19,081,581 from among the employees. Other donations were made from the CIAT Social Welfare Fund, the CIAT Volunteers Foundation, a donation from individuals linked to CIAT and others from the Senior Staff of the Center.

A Committee, "Solidarity for Earthquake Victims from the Coffee-Growing Zone," was created in order to decide how to use and distribute these resources. It was decided that one of the most efficient ways to help would be to invest these funds in something that was not perishable and that would continue as an R&D project, where the rural communities that were affected would play an active role. In order to accomplish this, it was necessary to enter into an agreement with local institutions that would be the links to the communities and at the same time transmit FPR methodologies so that they could implement the project sponsored by the CIAT employees fund.

The following sequence of activities was carried out, in which IPRA participated, was as follows:

[5] *CIAT Human Resources office, CRECIAT, UMATA Caicedonia, and Comité Cafeteros Caicedonia, respectively*

- The CIAT Solidarity Fund for the coffee-growing zone invited IPRA and other CIAT projects to discuss different alternatives that could be implemented in the zone.
- The Committee requested IPRA to present the CIAL methodology, after which they decided it would be a good alternative that CIAT could offer as am aid to the coffee-growing communities that were affected
- Members of the Solidarity Committee and the IPRA Project traveled to the zone and presented the proposal to local institutions: the Coffee Growers' Committee and the UMATA.
- It was decided to begin a pilot project, forming two CIALs in two townships to be defined.
- They were given the necessary materials for carrying out the work, including the CIAL handbooks.
- Two participatory diagnoses were conducted to identify the research priorities of the communities most affected by the quake: Montenegro and El Salado.
- CIAT Project SB-2 "Using Agrobiodiversity through Common Bean Biotechnology" provided the seed for one of the communities that prioritized this crop.
- The farmers who formed the CIALs and the facilitating agronomists from the UMATA and the Comité de Cafeferos were taken to visit some CIALs in the Province of Cauca who have experience in FPR.

To date, the following results have been obtained:
- Nonmonetary aid in the form of knowledge and training, where information ideas are stimulated without creating paternalism or dependencies
- Creation of two CIALs with the direct participation of 21 farmers affected by the recent quake
- Training of 7 agronomists in the CIAL methodology
- Evaluation of genetic materials of maize and common beans by farmers, seeking adaptation to their agronomic, economic and social conditions
- Farmer-to-farmer exchange of knowledge between and within zones that are resource poor, stimulating their desire to progress despite their precarious situation

CIAL microenterprises supported

Participatory development of implements for harvesting and transforming products with CIALs

Researchers: *José Ignacio Roa and Carlos Arturo Quirós*
Collaborators:
Freddy Escobar, Nolberto Zambrano, Alfonso Truque and the CIALs in Cauca[6]

All the communities where CIALs have been established have as their objective to improve the local agricultural system. The CIAL methodology seeks to help the community identify their most important research topic and the steps to follow

[6] IPRA technician and farmer-researchers from CORFOCIAL and the CIALs, respectively.

to arrive at alternative solutions, leaving a local R&D capacity installed. Some prefer to solve their problems of food security; others seek innovations because they are unhappy with their current systems. In any case all the groups seek new alternatives to the extent that their research program progresses and the group is strengthened, they begin to broaden their way of thinking and to make projections externally. They seek to improve their existing technologies by making them more efficient and improving the existing technologies or adapting them. This has been the case of many CIAL groups in northern Cauca, who have been working since 1990. Today there are 44 active groups doing research, 9 of which have small businesses that offer their community low-cost, good-quality services.

The IPRA Project, together with CORFOCIAL, has supported the generation and/or adaptation of agroindustrial implements to local conditions. A local manufacturer of this equipment, Humberto Muñoz, has worked closely with the research team to ensure that the modifications suggested by the farmers are incorporated. In this joint process, the following equipment has been generated:

- Maize sheller (Photo 1)
- Maize thresher (Photo 1)
- Maize crusher
- Rice huller (Photo 2)

Manual huller[7]

Michel Valès and José Ignacio.Roa[8]

Upland rice was introduced for planting on the hillsides of the Colombian Andes by the CIAT-CIRAD collaborative project, which forms part of the CIAT IP-4 Rice Project. CIALs in the villages of Chambimbe, Betania, Totoró and Pan de Azúcar, Cauca Province have been evaluating some upland rice varieties. Their interest is to determine which are best adapted to the region's climatic conditions, low-fertility soils and scarce economic resources. They have been supported in their work by two CIAT projects (IPRA and Rice Improvement, IP-4), their second-order association (CORFOCIAL) and the Municipal Agricultural Technical Assistance Units (UMATAs).

These communities are trying to meet their nutritional needs by increasing rice consumption. As the area planted to rice became larger, the farmers had to find a method for mechanizing the process of milling the grain—a very strenuous task for them, especially the women. They used a rustic wooden pestle (*pilón*), which consists of a concave base and a cylindrical piece of wood or tree trunk used to pound the rice until the outer husks and rice bran are separated from the grains.

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[7] *Translated from Arroz en las Américas, vol. 19(1), 1999, 6-8.*
[8] *Improved Rice for LAC (IP-4) and IPRA, respectively*

A manual huller is therefore an indispensable tool for the postharvest processing of the paddy rice in a rural community that wishes to establish upland rice cultivation for local consumption. In 1999, a second trial was conducted with the huller so that the farmers could evaluate it and make recommendations to the manufacturer (Photo 2). The final acceptance of the machine among the small farmers belonging to the Cauca CIALs was very high. The prototype machine weighs less than 50 kg, but the next version will be lighter. One person can dehull at least 4 kg of rice in an hour. After the grain has passed twice through the huller, brown rice is obtained. The machine does not break the grain. The huller is operated manually, but it is possible to hook up a 1-hp motor. A group of small farmers can purchase the huller for US$300.

At a recent FLAR convention, the huller was presented to the delegates from the Latin American countries and was well received by them.

Photo 1. Members of the CIAL El Diviso, Rosas, Cauca, with the maize thresher and sheller, from left to right, respectively.

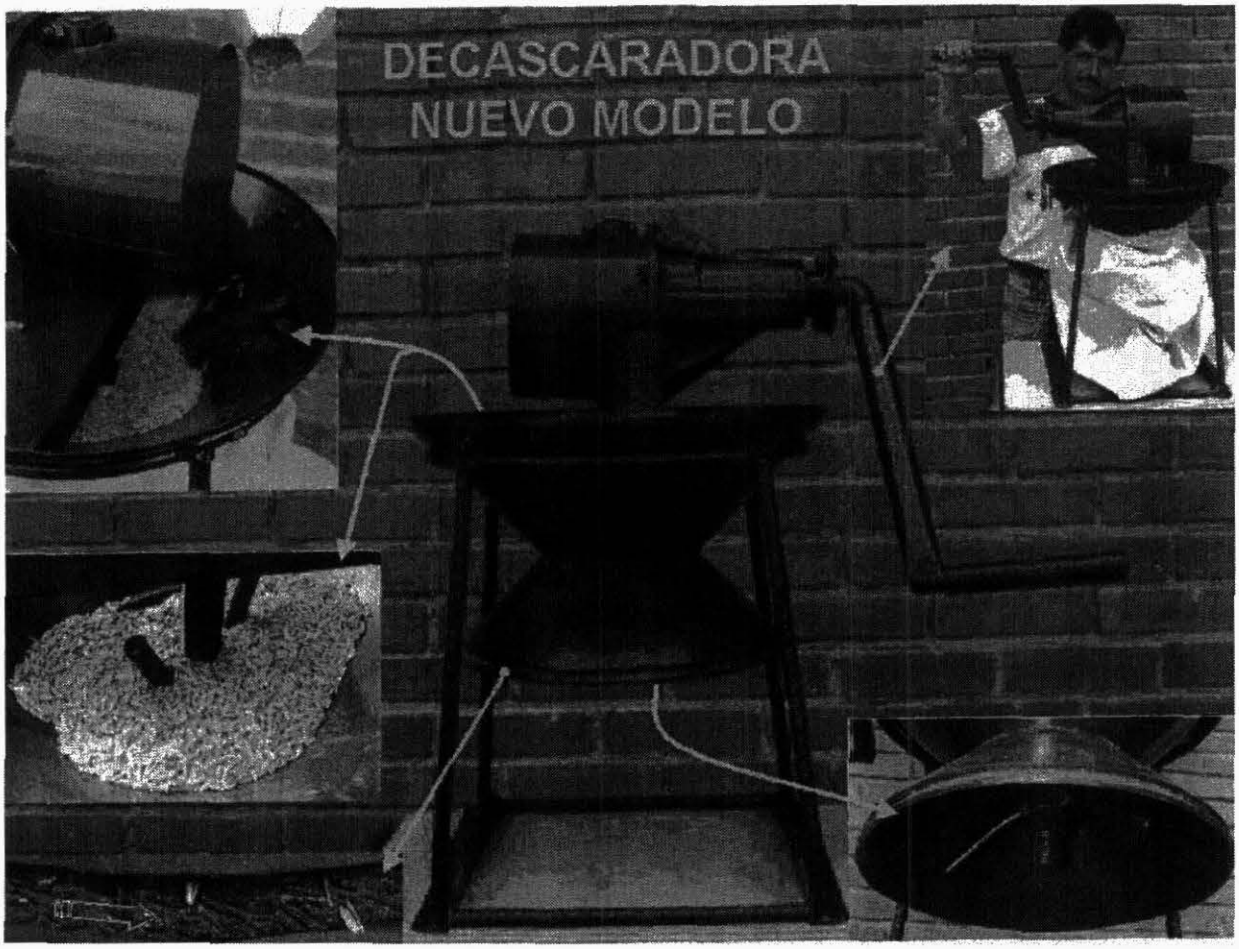

Photo 2. Prototype of rice huller developed by Humberto Muñoz, with adaptations suggested by the CIAL farmers who are conducting upland rice experiments in Cauca, Colombia.

Data collection on CIALs in LAC

Database

Jorge Luis Cabrera and Carlos Arturo Quirós
Collaborators:
José Ignacio Roa, Luis Alfredo Hernández, James García

The information that is generated through the interactions with the communities using the CIAL methodology has originated a large amount of information that merits special management because of its diversity and origin.

Based on the results obtained in the different regions and countries and in the spirit of compiling and maintaining the information available, the IPRA Project has created its own database. The initial idea is to create it maintain it and make the necessary adjustments so that it functions as a tool in the interactions between the research partners and the communities. It is expected that any organization in each country will eventually take the initiative of creating its own

database and establish the linkages necessary to make the connection between them, establishing an efficient network for updating and supplying information for anyone who requires it.

This database should also establish linkages and connections with other projects, such as the INFORCAUCA project, offering its services as a tool that helps establish the decision-making in the participating communities and institution. The objectives are to:

- Compile and store the information proceeding from the research of projects with the communities
- Convert the database into an agile and efficient tool in PR processes
- Make it available to the public
- Establish a system of feedback with partners who will feed into it and maintain the information system up to date

The database was created in Microsoft Access, which is compatible with many other software programs and is also flexible with respect to possible future modifications should that be necessary. The structure was designed based on the steps of the CIAL methodology: Motivation, Election of the Committee, Participatory Diagnosis, Planning the trial, Evaluating the technology, Analyzing the results and Feedback to the community. The information is organized by crop cycle or trial, considering the research phase in which the CIAL is found: Trial, Confirmation, Production Lot and Commercial Lot.

At present, the information is being compiled from those institutions that have been partners of the IPRA project in the Dissemination Phase of the CIAL methodology: Bolivia, Ecuador, Colombia, Venezuela, Nicaragua and Honduras. Information related to the population of the community, geographic coordinates, altitude and principal crops—information of use for generating maps using the GIS system—is also being stored.

The database is available to all those who are interested in the topic: institutions and/or farmers who which to consult it. In the near future, it will be included in the Project's Web page.

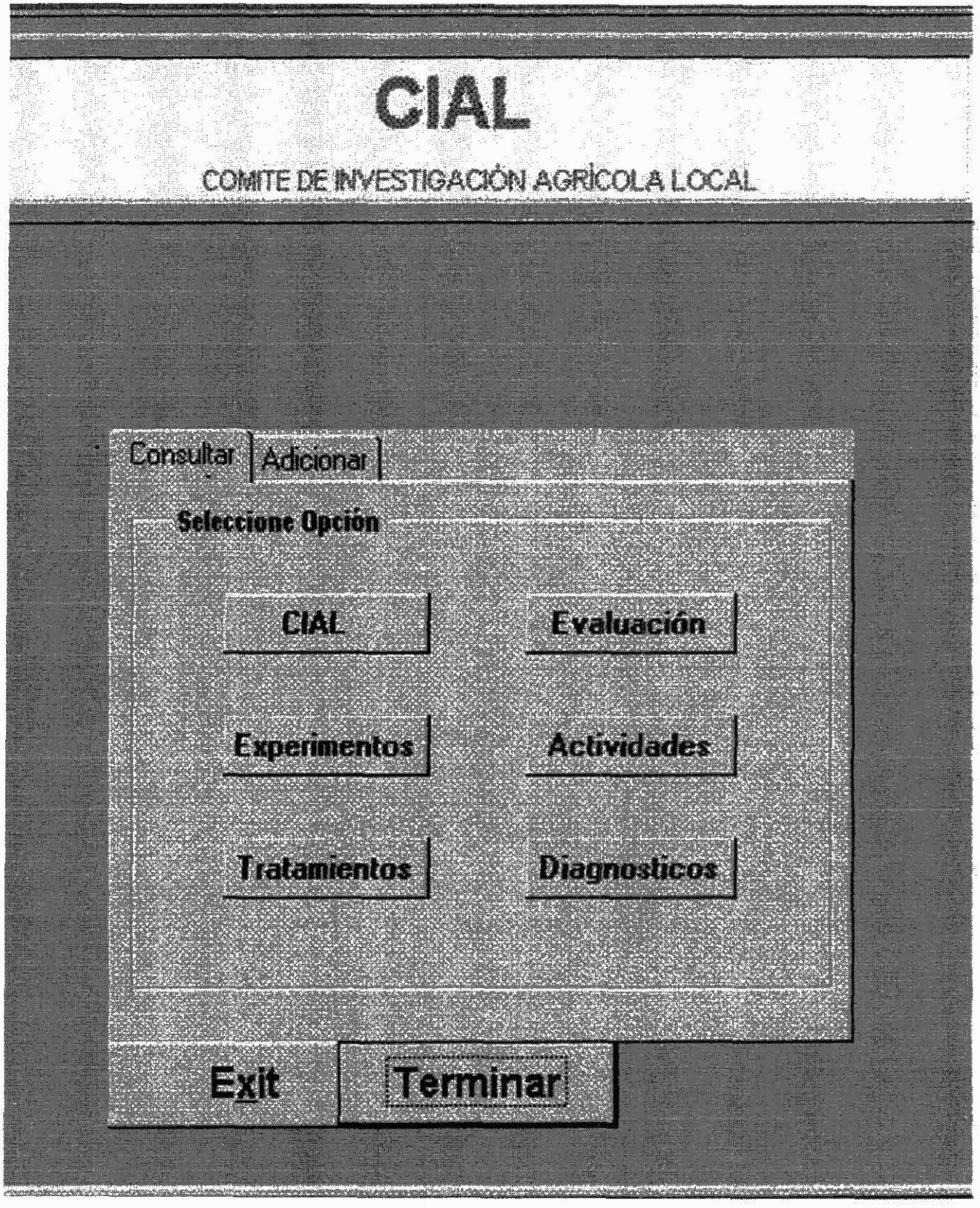

Figure 1. Initial window, which permits user to enter database.

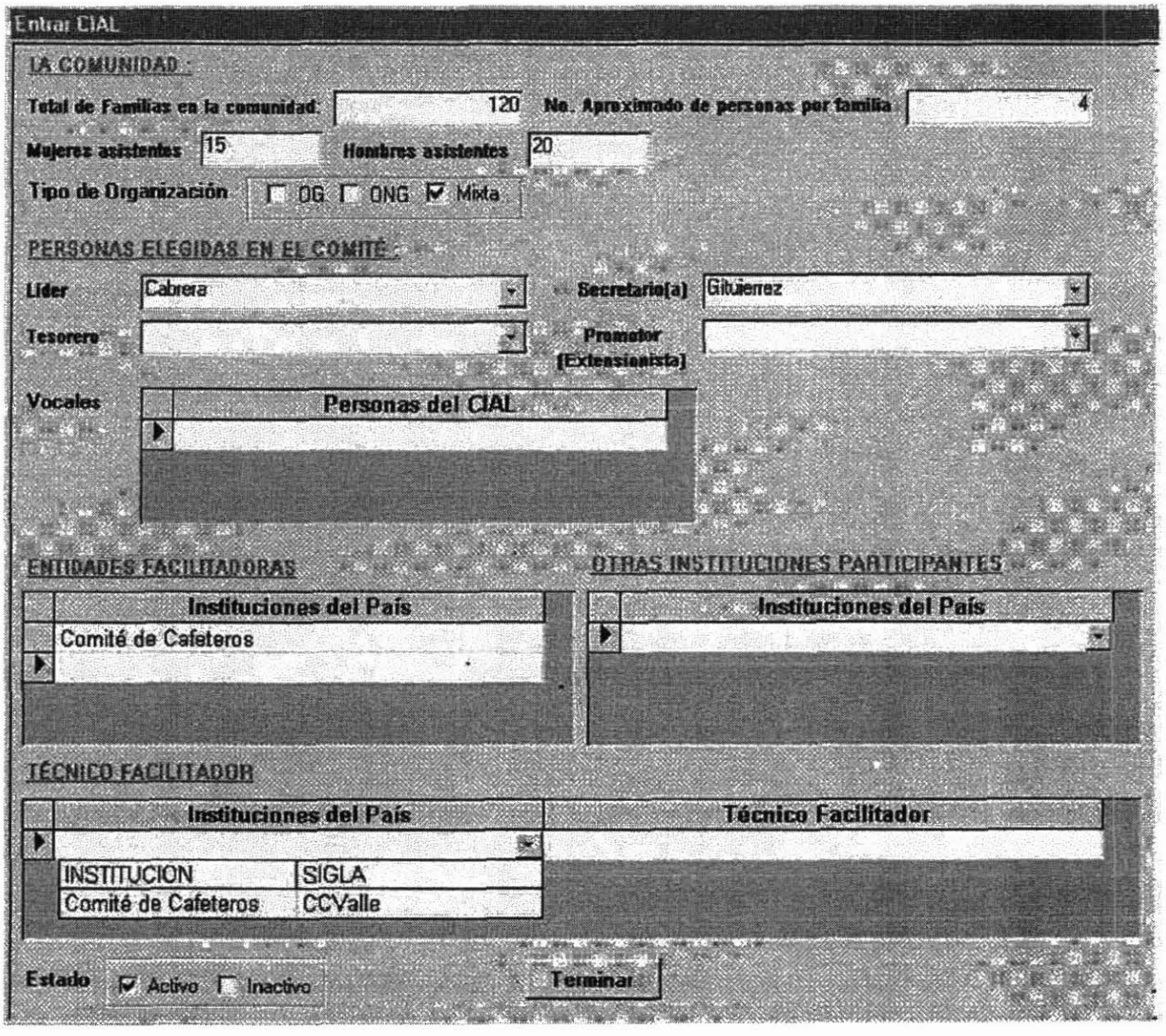

Figure 2. Format for entering database of a given CIAL, where user simply clicks CIAL icon.

OUTPUT 7. CAPACITY OF THE IPRA TEAM, STRENGTHENED

MILESTONES

* Access to relevant information, improved
* Knowledge of methodologies in social research (case studies)
* Team capacity and skills, enhanced

Documentation Center

Jorge Luis Cabrera

The project has created a library, where its products, documents, talks, books, and videos are being referenced. External Information and documentation of interest is being stored in Endnote. In the near future, this information will be placed on the Web site in order to share it with those who are interested in the topics in the form of talks, videos, documents, and photographs.

IPRA team attendance at training events during the working year 1999-2000

In an effort to strengthen the IPRA team members with respect to their knowledge and skills, training opportunities have been offered. This year members of the team participated in the events shown in Table 1.

Table 1. Information on courses in which IPRA team members have participated.

Date	Name of course or event	Length	Place	IPRA team member trained
17 Jan.-24 Mar.	Intensive English course	10 wk	Bournemouth, England	Carlos Arturo Quirós
24 Feb.	Management of library services	1 h	Library, CIAT HQ	Ligia García
23 Mar.	Endnote	1 h	Library, CIAT HQ	Ligia García, Jorge Luis Cabrera
12 April	Database management	2 h	Computer classroom, CIAT HQ	Ligia García, Jorge Luis Cabrera
29 May-2 June	Power Point	10 h	Computer classroom, CIAT HQ	Fredy Escobar, Ligia García

3 July-25 Aug.	Intensive English course	8 wk	Victoria, Canada	Luis Alfredo Hernández
31 Aug.	Case studies methodology	8 h	CIAT HQ, Palmira	Entire team
1 Sept.-10 Nov.	Intensive English course	10 wk	Victoria, Canada	José Ignacio Roa
25-29 Sept.	Advanced course in Word	10 h	Computer classroom, CIAT HQ	Ligia García

Methodologies in social research: The case study

Trudy Brekelbaum[1]

On August 30, the IPRA team participated in a workshop that focused on the case study: Design and methods.[2] The topics dealt with included: situations relevant for different research strategies, definitions, strengths and weaknesses, desirable researchers' skills, five basic design components, the role of theory in case study design including the level of analysis and how to generalize from a case study, as well as criteria for judging the quality of the case study. Four relevant designs were discussed: simple and multiple cases with a holistic or incorporated design. The types and sources of data for case studies were analyzed as well as how to develop the protocol. For each of the topics, a series of questions were developed to be used in preparing the protocol, based on a sample or pilot case study. This ensures familiarity with the methodology before engaging in a full case study. The consultant submitted a synthesis of this material (*Estudios de caso: Diseño y métodos*) as well as a presentation in Power Point.

[1] *Consultant to the IPRA Project.*

[2] *Based on the book by Robert K. Yin (1994) Case study research design and methods, 2nd ed. Applied Social Research Methods Series vol. 5. Sage Publications, Thousand Oaks, CA. 170 pp.*

STAFF

Carlos Arturo Quirós	Acting Project Manager, Research (100%)
Luis Alfredo Hernández	Associate I, Research (75%, jointly with IP-3
José Ignacio Roa	Professional Specialist (100%)
Olaf Westermann	Research Fellow (50%)
Trudy Brekelbaum	Consultant
Jorge Luis Cabrera	Technician I (100%)
Ligia García	Secretary IV (100%)
Fredy Escobar	Technician II (70%, jointly with SP-PR/GA)
Elías Claros	Thesis Student, Animal Science, Universidad Nacional-Palmira (50%)
Ann R. Braun	Senior Scientist (1)
María del Pilar Guerrero	Assistant (2)

(1) Left CIAT on April 19, 2000
(2) Left CIAT on June 3, 2000

DONORS SN-3

* BMZ - Der Bundesminister für Wirstschafliche Zusammenarbeit, Germany
* Chorlavi Group
* DfID - Department for International Development, United Kingdom
* DANIDA - Danish International Development Assistance, Denmark
* W.K. Kellogg Foundation, Michigan
* International Development Research Centre (IDRC), Ottawa, Canada

LIST OF ACRONYMS AND ABBREVIATIONS USED

Acronyms

APAE	Asociación de Promotores Agroforestales del Ecuador
ASEL	(Honduras) Agricultura Sostenible en Laderas
ASOBESURCA	Asociación de Beneficiarios de la Subcuenca del Río Cabuyal (Colombia)
ASOCIAL	Asociación de Cials
ASOHCIAL	Asociación Hondureña de CIALs
ASONACIAL	(Honduras) asiciacion nacional de CIALs
ASOPANELA	Asociación nacional de Paneleros (Colombia)
BMZ	Der Bundesminister für Wirtschafliche Zusammenarbeit (German Federal Ministry for Economic Cooperation and Development)
CAPRi	Systemwide Program on Collective Action and Property Rights
CDR	Center for Development Research (Denmark)
CENIAP	Centro Nacional de Investigaciones Agropecuarias (Venezuela)
CENICAFE	Centro Nacional de Investigaciones de Café (Colombia)
CENTA	Centro Nacional de Tecnología Agropecuaria (Honduras, Salvador)
CETEC	Corporación para Estudios Interdiciplinarios y Asesoría Técnica (Colombia)
CGIAR	Consultative Group on International Agricultural Research
CIAE	Centro de investigación Agricola y extension
CIAL	Comité de Investigación Agrícola Local (CIAT, Colombia)
CIARA	Fundación para la Ciencia y la Investigación Aplicada a la Reforma Agraria (Venezuela)
CIAT	Centro de Investigaciones en Agricultura Tropical (Bolivia)
CIAT	Centro Internacional de Agricultura Tropical (Colombia)
CIMMYT	Centro Internacional de Mejoramiento de Maiz y Trigo (Mexico)
CIPASLA	Consorcio Interinstitucional para la Agricultura Sostenible en Laderas (Colombia)
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement (France)
CLAYUCA	(Colombia) Consorcio Latinoamericano y del Caribe de apoyo a la investigación y desarrollo a la yuca
CLODEST	Comite local para el desarrollo sostenible de la cuenca de rio Tascalapa Honduras

CNI	(Honduras) Centro nacional de investigación
CNPMF	Centro Nacional de Pesquisa de Mandioca e Fruticultura Tropical (Brazil)
CONASEL	(Honduras) Comision nacional para la agricultura sostenible en laderas
CORFOCIAL	Corporación para el Fomento de los Comités de Investigacion Agrícola Local (Colombia)
CORPOICA	Corporación Colombiana de Investigación Agropecuaria
CORPOTUNIA	(Colombia) Corporación para el desarrollo de Tunia
CORPOVERSALLES	Corporación para el desarrollo Versalles (Colombia)
CRECED	Centro Regional de Estudios de Capacitación, Educación y Desarrollo (Colombia)
CRECIAT	Fondo de ahorro y credito de los empleados del CIAT
CUOA	Corporación Universitaria Autonoma de Occidente (Colombia)
CVC	Corporación Regional del Valle del Cauca (Colombia)
DANE	Departamento Administrativo Nacional de Estadística (Colombia)
DANIDA	Danish International Development Assistance
DECOTUX	Desarrollo Comunitario de los Tuxtlas (Mexico)
DFC	Desarrollo Forestal Campesino (Honduras)
DfID	Department for International Development (UK)
DICTA	Dirección de Ciencia y Tecnología Agropecuaria de Honduras
DIP	Diagnóstico, Investigación y Participación (Mexico)
DIPEIB-C	Dirección Provincial de Educación Intercultural Bilingüe (Ecuador)
DISE	Departamento de Investigacion y Servicio de la Universidad de Yucatán (Mexico)
EAP	Escuela Agrícola Panamericana at Zamorano (Honduras)
EARTH	(Costa Rica) Escuela de Agricultura de la región Tropical Húmeda
EIAG	Escuela Internacional de Agricultura & Ganadería (Nicaragua)
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária (Brazil)
ENA	(Honduras) Escuela Nacional Agricola
EPMR	(USA)External panel management Review
FEDECAFE	Fedración nacional de cafeteros (Colombia)
FEPROH	Fomento Evangélico para el Progreso de Honduras
FIDAR	Fundación para la Investigación y el Desarrollo de la Agroindustria Rural (Colombia)
FLAR	Fondo Latinoamericano y del Caribe para el cultivo de arroz
FMVZ	Facultad de Medicina veterinaria y zootenia (Mexico)
FONAIAP	Fondo Nacional de Investigaciones Agropecuarias (Venezuela)
FPR	Farmer Participatory Research

FUNAN	Fundación Antisana (Ecuador)
FUNAPIB	(Honduras) Fundación Parque nacional de Pico Bonito
FUNCOP	Fundación Para la Comunicación Popular (Colombia)
FUNDACITE	Fundación para el Desarrollo de la Ciencia y la Tecnología del Estado Lara (Venezuela)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)
HHI	Healing Hands International
IAPAR	(Brazil) Instituto Agronómico do Paraná
IARC	Internatonal agricuultural research center (CGIAR)
IASCP	International Association for the Study of Common Property
ICA	Institute of Cultural Affairs (Ghana)
ICARDA	International Center for Agricultural Research in the Dry Areas (Syria)
ICLARM	International Center for Living Aquatic Resources Management (Philippines)
ICRAF	International Centre for Research in Agroforestry (Kenya)
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics (India)
IDB	Interamerican Development Bank (= BID, USA)
IFPRI	International Food Policy Research Institute (USA)
IHDER	Instituto Hondureño de Desarrollo Rural
IICA	(Costa Rica) Instituto Interamericano de coperación para la agricultura
IIRR	International Institute of Rural Reconstruction (Ecuador)
IITA	International Institute of Tropical Agriculture (Nigeria)
ILRI	International Livestock Research Institute (Ethiopia)
INIAP	Instituto Nacional de Investigaciones Agropecuarias (Ecuador)
INIVIT	Instituto de Investigaciones de Viandas Tropicales (Cuba)
INPRHU	Instituto de Promoción Humana (Nicaragua)
INTA	Instituto Nicaragüense de Tecnología Agropecuaria (Nicaragua)
IPCA	Investigación Participativa en Centro América (Honduras)
ISNAR	International Service for National Agricultural Research (The Netherlands)
MAC	Ministerio de Agricultura y Cría (Venezuela)
MAG	Ministerio de Agricultura y Ganadería (Costa Rica, Ecuador)
MUSALAC	red Latinoamericana de Musaceas
NOVARTIS	Artes de la nueva vida
PDPMM	Programa de Desarrollo y Paz del Magdalena Medio (Colombia)

PRIAG	Programa de Reforzamiento a la Investigación Agronómica sobre Granos en Centro América
PRODESSA	(Nicaragua) Centro de promoción en investigación, desarrollo y formación para el sector agropecuario
PROFRISA	(Colombia) Proyecto Regional de frijol para la zona Andina
PROINPA	Fundación Promoción e Investigación de Productos Andinos (Bolivia)
PROLANSATE	(Honduras)Fundación para la protecccción de Lancetilla, Punta Sal, y Texiguat
PRONATTA	Pragrama Nacional de transferencia de tegnologia Agropecuario (Colombia)
PROSALAFA	Proyecto de Apoyo a Pequeños Productores y Pescadores Artesanales de a Zona Semi-Arida de los Estados de Lara y Falcón (Venezuela)
PSB	Proyecto de Plantio directo en el centro sur
PTA	Projects in Alternative Agriculture (Brazil)
RNG	Natural Resourse Group del CIMMYT
SCD	Sociedad Cristiana para el Desarrollo (Honduras)
SENA	Servicio Nacional de Aprendizaje (Colombia)
SERTEDESO	(Honduras) Servicio tecnicos para el desarrollo Sostenible
SOL	Supermercados de Opciones para laderas
SP-PRGA	Systemwide Program on Participatory Research and Gender Analysis Program (CIAT)
TAC	Technical Advisory Committee (Italy)
TecniCIAL	(Honduras) Tecnicos que trabajan con CIAL
UADY	Universidad Autónoma de Yucatán (Mexico)
UMATA	Unidad Municipal de Asistencia Técnica Agropecuaria (Colombia)
UNA	Universidad Nacional Agraria (Nicaragua)
UNICAM	Universidad Campesina (Nicaragua)
UNIR	Una Nueva Iniciativa Rural (Manizales)
UNIR	(Honduras) Una Nueva Iniciativa Rural
UNOCANC	Unión de Organizaciones Campesinas del Norte de Cotopaxi (Ecuador)
USAID	United States Agency for International Development
UTE	Universidad Tecnológica Equinocial (Ecuador)

Abbreviations

CG	CGIAR
DSSAT	Decision Support System for Agrotechnology Transfer
DST	Decision-support tools
FFS	Farmer field schools (FAO)
FPR	Farmer participatory research
GA	Gender analysis
GIS	Geographic information system
GNP	Gross national product
GO	Government organization
HQ	Headquarters
IA	Impact analysis
IAEM	Integrated agroecosystem mangement and conservation
IARC	International agricultural research center (CGIAR system)
IPM	Integrated pest management
ISFM	Integrated soil fertility management
LAC	Latin America and the Caribbean
M&E	Monitoring and evaluation
NARI	National agricultural research institute
NARS	National agricultural research systems
NGO	Nongovernmental organization
NRM	Natural resource management
PB	Plant breeding
PDM	Participatory diagnosis meeting
PM&E	Participatory monitoring and evaluation
PPB	Participatory plant breeding
PPO	Planning by objectives
PR	Participatory research
PRA	Participatory rural appraisal
PVS	Participatory variety selection
R&D	Research and development
RAAKS	Rapid assessment of agricultural knowledge systems
RESTORE	Research Tool for Natural Resource Management, Monitoring and Evaluation
SCAT	Social capital assessment tool
SOL	Cropping systems options
SWOT	Strengths, weaknesses, opportunities and threats